

FILE PRODUCED NATIVELY

datetime	block_height	network_diff	est_network_hashrate	BTC_price	day_ahead_LMP	real_time_LMP	breakeven_mining_cost	day_ahead_LMP_rev	mining_rev	realized_rev
22:13.7	574204	6.35303E+12	5.38327E+13	5320.02	0.0059375	0.0061512	0.0737658	0.1837063	0.1903181	2.2480786
27:16.8	574204	6.35303E+12	5.38327E+13	5320.01	0.0059375	0.0062341	0.0737656	0.1837063	0.1928831	2.2480744
32:19.8	574204	6.35303E+12	5.38327E+13	5321.94	0.0059375	0.0048202	0.0737924	0.1837063	0.149137	2.24889
37:22.9	574205	6.35303E+12	5.30839E+13	5321.95	0.0059375	0.0036136	0.0748335	0.1837063	0.1118048	2.2806172
42:25.9	574205	6.35303E+12	5.30839E+13	5325.19	0.0059375	0.0022848	0.0740879	0.1837063	0.0706917	2.2820056
47:28.9	574206	6.35303E+12	5.44532E+13	5328.27	0.0059375	0.0052204	0.0730384	0.1837063	0.1615192	2.225912
52:31.9	574206	6.35303E+12	5.44532E+13	5328.65	0.0059375	0.0074321	0.0730436	0.1837063	0.2299492	2.2260707
57:34.9	574207	6.35303E+12	5.39845E+13	5327.68	0.0059375	0.0009997	0.0736643	0.1837063	0.0309307	2.2449863
02:37.8	574207	6.35303E+12	5.39845E+13	5327.22	0.0009735	0.0025864	0.073658	0.0301201	0.0800232	2.2447925
07:40.8	574208	6.35303E+12	5.34662E+13	5325.01	0.0009735	-0.0034704	0.0743412	0.0301201	-0.1073742	2.2656139
12:43.8	574208	6.35303E+12	5.34662E+13	5325.01	0.0009735	-0.0085232	0.0743412	0.0301201	-0.2637078	2.2656139
17:46.9	574209	6.35303E+12	5.33477E+13	5321.01	0.0009735	0.0007819	0.0744503	0.0301201	0.024192	2.2689395
22:49.7	574209	6.35303E+12	5.33477E+13	5327.95	0.0009735	0.0010434	0.0745474	0.0301201	0.0322828	2.2718988
27:53.3	574211	6.35303E+12	5.42133E+13	5325.19	0.0009735	-0.0190352	0.0733191	0.0301201	-0.5889491	2.2344662
32:56.5	574212	6.35303E+12	5.54528E+13	5323.43	0.0009735	-0.0316021	0.0716566	0.0301201	-0.977769	2.1838
37:59.5	574214	6.35303E+12	5.533E+13	5323.35	0.0009735	-0.0308754	0.0718145	0.0301201	-0.9552849	2.1886119
43:03.0	574215	6.35303E+12	5.58834E+13	5323.1	0.0009735	-0.0266648	0.0711461	0.0301201	-0.9276864	2.1668382
48:06.0	574215	6.35303E+12	5.58834E+13	5326.55	0.0009735	-0.030956	0.0711461	0.0301201	-0.8244891	2.1682425
53:09.5	574215	6.35303E+12	5.58834E+13	5328.3	0.0009735	-0.031885	0.0717163	0.0301201	-0.9577786	2.1689549
58:12.8	574216	6.35303E+12	5.54406E+13	5330.35	0.0003732	-0.0310131	0.0717656	0.0115468	-0.9865219	2.1856184
03:15.8	574216	6.35303E+12	5.58377E+13	5330.78	0.0003732	-0.0030349	0.071261	0.0115468	-0.9595453	2.1871201
08:18.9	574218	6.35303E+12	5.59914E+13	5329.45	0.0003732	-0.0190837	0.0710476	0.0115468	-0.0938998	2.1717421
13:22.6	574220	6.35303E+12	5.59914E+13	5348.41	0.0003732	-0.0174614	0.0713003	0.0115468	-0.5904497	2.1652392
18:25.7	574220	6.35303E+12	5.60441E+13	5338.35	0.0003732	-0.0275277	0.0710397	0.0115468	-0.5402557	2.1729422
23:28.8	574223	6.35303E+12	5.60912E+13	5338.35	0.0003732	-0.0300569	0.0709666	0.0115468	-0.851707	2.164998
28:31.6	574226	6.35303E+12	5.60441E+13	5328.39	0.0003732	-0.0260876	0.0710294	0.0115468	-0.9299605	2.1627725
33:34.4	574226	6.35303E+12	5.60441E+13	5333.1	0.0003732	-0.0260876	0.0710294	0.0115468	-0.8071503	2.1646843
38:37.6	574227	6.35303E+12	5.56725E+13	5332.07	0.0003732	-0.0192161	0.0714897	0.0115468	-0.5945461	2.1787132
43:40.6	574227	6.35303E+12	5.56725E+13	5339.02	0.0003732	-0.0197771	0.0715829	0.0115468	-0.6119035	2.181553
53:47.1	574228	6.35303E+12	5.52451E+13	5343.15	0.0003732	-0.0194532	0.0721925	0.0115468	-0.601882	2.2001303
58:50.2	574229	6.35303E+12	5.5892E+13	5338.61	0.0003732	-0.0291334	0.0712963	0.0115468	-0.9013874	2.1728179
03:53.5	574229	6.35303E+12	5.5892E+13	5336.51	0.0003732	-0.0235618	0.0712682	0.0115468	-0.7290021	2.1719632
08:56.9	574229	6.35303E+12	5.5892E+13	5340.15	0.0002799	-0.0187222	0.0713168	0.0086601	-0.5792649	2.1734447
14:00.0	574230	6.35303E+12	5.5892E+13	5341.69	0.0002799	-0.0308233	0.0713374	0.0086601	-0.9536729	2.1740715
19:03.3	574230	6.35303E+12	5.53347E+13	5346.1	0.0002799	-0.0302971	0.0721153	0.0086601	-0.9373923	2.1977795
24:06.5	574230	6.35303E+12	5.53347E+13	5347.19	0.0002799	-0.0301938	0.07211	0.0086601	-0.9341962	2.1982276
29:09.8	574231	6.35303E+12	5.49411E+13	5341.77	0.0002799	-0.0280347	0.0725732	0.0086601	-0.8673936	2.2117345
34:12.9	574231	6.35303E+12	5.49411E+13	5342.48	0.0002799	-0.0281744	0.0725829	0.0086601	-0.8717159	2.2120284
39:15.9	574232	6.35303E+12	5.47061E+13	5349.99	0.0002799	-0.0268456	0.0729971	0.0086601	-0.8306029	2.2246529
44:19.1	574232	6.35303E+12	5.47061E+13	5346.06	0.0002799	-0.0273812	0.0729435	0.0086601	-0.8471743	2.2230187
49:22.3	574232	6.35303E+12	5.47061E+13	5350.69	0.0002799	-0.0274119	0.0730067	0.0086601	-0.8481242	2.224944
54:25.5	574232	6.35303E+12	5.47061E+13	5361.36	0.0002799	-0.0288527	0.0731523	0.0086601	-0.8927025	2.2293808
59:28.2	574232	6.35303E+12	5.47061E+13	5358.36	0.0002799	-0.0281218	0.0731113	0.0086601	-0.8700885	2.2281334
04:31.6	574233	6.35303E+12	5.47061E+13	5366.19	0.0002799	-0.0262745	0.0732182	0.0086601	-0.812933	2.2313893
09:34.5	574233	6.35303E+12	5.35475E+13	5377.4	0.0028119	-0.026271	0.0749586	0.0870002	-0.8128247	2.2844298
			5.35475E+13	5358.81	0.0028119	-0.0028349	0.0746994	0.0870002	-0.0877118	2.2765324

14:37.5	574233	6.35303E+12	5.35475E+13	5359.15	0.0028119	-0.0008362	0.0747042	0.0870002	-0.025872	2.2766768	2.2766768
19:40.5	574233	6.35303E+12	5.35475E+13	5359.66	0.0028119	-0.018256	0.0747113	0.0870002	-0.5648406	2.2768935	2.2768935
24:43.4	574234	6.35303E+12	5.31615E+13	5358.18	0.0028119	-0.0019335	0.075233	0.0870002	-0.0598225	2.2927926	2.2927926
29:46.4	574234	6.35303E+12	5.31615E+13	5351.99	0.0028119	-0.0146595	0.0751461	0.0870002	-0.4535649	2.2901439	2.2901439
34:49.2	574234	6.35303E+12	5.31615E+13	5344.84	0.0028119	-0.0033057	0.0750457	0.0870002	-0.1022784	2.2870844	2.2870844
39:52.4	574236	6.35303E+12	5.29706E+13	5349.94	0.0028119	-0.0160658	0.075388	0.0870002	-0.4970759	2.2975179	2.2975179
44:55.4	574237	6.35303E+12	5.26741E+13	5348.56	0.0028119	-0.0313865	0.0757929	0.0870002	-0.9710983	2.3098563	2.3098563
49:58.5	574238	6.35303E+12	5.2719E+13	5353.94	0.0028119	-0.0300483	0.0758044	0.0870002	-0.9296944	2.3102083	2.3102083
55:01.6	574238	6.35303E+12	5.2719E+13	5351.76	0.0028119	-0.0054625	0.0757736	0.0870002	-0.1690098	2.3092677	2.3092677
00:04.5	574239	6.35303E+12	5.28168E+13	5350.18	0.0122894	-0.0015936	0.0756109	0.380234	-0.049306	2.3043114	2.3043114
10:10.2	574240	6.35303E+12	5.25658E+13	5348.27	0.0122894	-0.0303162	0.0756109	0.380234	-0.049306	2.3043114	2.3043114
15:13.1	574243	6.35303E+12	5.35108E+13	5354.34	0.0122894	4.40E-06	0.0746884	0.380234	-0.9379832	2.314487	2.314487
20:15.8	574245	6.35303E+12	5.38531E+13	5358.41	0.0122894	0.0009337	0.07427	0.380234	0.0001361	2.2761958	2.2761958
25:18.5	574245	6.35303E+12	5.38531E+13	5356.02	0.0122894	-0.0033181	0.0742369	0.380234	0.0288887	2.2634449	2.2634449
30:21.5	574245	6.35303E+12	5.41667E+13	5359.34	0.0122894	-0.0013696	0.0738528	0.380234	-0.102662	2.2624353	2.2624353
35:24.4	574246	6.35303E+12	5.41667E+13	5361.98	0.0122894	0.0048181	0.0738892	0.380234	-0.0423754	2.2507317	2.2507317
40:27.4	574246	6.35303E+12	5.41667E+13	5366.6	0.0122894	0.0739529	0.0739529	0.380234	0.149072	2.2518404	2.2518404
45:30.2	574248	6.35303E+12	5.4179E+13	5365.93	0.0122894	-0.001393	0.0739693	0.380234	-0.4779859	2.2537807	2.2537807
50:33.1	574251	6.35303E+12	5.52479E+13	5359.19	0.0122894	-0.0017926	0.0724055	0.380234	-0.0430994	2.2542821	2.2542821
55:36.2	574251	6.35303E+12	5.52479E+13	5356.1	0.0122894	0.0017688	0.0723638	0.380234	0.055463	2.2066234	2.2066234
00:39.1	574252	6.35303E+12	5.50584E+13	5358.27	0.0171137	0.0005096	0.0726423	0.380234	0.0547267	2.2053511	2.2053511
05:43.7	574252	6.35303E+12	5.50584E+13	5360.85	0.0171137	0.1588863	0.0726772	0.5294979	0.1576702	2.2138386	2.2138386
10:47.0	574253	6.35303E+12	5.55050E+13	5361.66	0.0171137	0.0136055	0.0720441	0.5294979	4.9159421	2.2149045	4.9159421
15:49.8	574253	6.35303E+12	5.5978E+13	5358.19	0.0171137	0.0099201	0.0714478	0.5294979	0.4209542	2.1956089	2.1956089
20:52.5	574256	6.35303E+12	5.57331E+13	5364.52	0.0171137	0.0105695	0.0718465	0.5294979	0.3069279	2.1774367	2.1774367
25:55.7	574257	6.35303E+12	5.59531E+13	5368.93	0.0171137	0.0083334	0.0716229	0.5294979	0.3270203	2.1895872	2.1895872
30:58.7	574257	6.35303E+12	5.59531E+13	5369.93	0.0171137	0.0068334	0.0716362	0.5294979	0.2578354	2.182771	2.182771
36:01.5	574257	6.35303E+12	5.59531E+13	5368.01	0.0171137	0.0067429	0.0716106	0.5294979	0.2114254	2.1831776	2.1831776
41:04.6	574258	6.35303E+12	5.61961E+13	5363.48	0.0171137	0.0078346	0.0712408	0.5294979	0.2086253	2.182397	2.182397
46:07.7	574258	6.35303E+12	5.61961E+13	5363.48	0.0171137	0.0075805	0.0712408	0.5294979	0.2424025	2.1711281	2.1711281
51:10.6	574258	6.35303E+12	5.61961E+13	5363.48	0.0171137	0.0075805	0.0712408	0.5294979	0.2345407	2.1711281	2.1711281
01:19.4	574258	6.35303E+12	5.61961E+13	5365.45	0.0174714	0.009863	0.0712408	0.5294979	0.2419075	2.1711281	2.1711281
06:22.3	574258	6.35303E+12	5.61961E+13	5365.45	0.0174714	0.0138977	0.0712124	0.5405651	0.3051612	2.1719255	2.1719255
16:28.1	574260	6.35303E+12	5.46276E+13	5368.73	0.0174714	0.0088417	0.0733581	0.5405651	0.4299948	2.1702618	2.1702618
26:33.4	574260	6.35303E+12	5.46276E+13	5367.86	0.0174714	0.0074735	0.0733462	0.5405651	0.2735622	2.2356531	2.2356531
31:36.3	574260	6.35303E+12	5.46276E+13	5367.86	0.0174714	0.0083523	0.0733687	0.5405651	0.2312301	2.2352908	2.2352908
36:39.4	574261	6.35303E+12	5.46276E+13	5369.51	0.0174714	0.0077585	0.0746615	0.5405651	0.2584202	2.2359779	2.2359779
41:42.3	574261	6.35303E+12	5.36607E+13	5367.41	0.0174714	0.0087074	0.0745727	0.5405651	0.240048	2.2753756	2.2753756
46:45.2	574261	6.35303E+12	5.36607E+13	5361.03	0.0174714	0.0086441	0.0746033	0.5405651	0.269407	2.2726709	2.2726709
51:48.5	574261	6.35303E+12	5.36607E+13	5363.23	0.0174714	0.0107546	0.0746695	0.5405651	0.2674485	2.2736036	2.2736036
56:51.5	574261	6.35303E+12	5.36607E+13	5367.99	0.0174714	0.0087535	0.0748159	0.5405651	0.3327473	2.2756214	2.2756214
01:54.8	574261	6.35303E+12	5.36607E+13	5378.51	0.0174714	0.0082983	0.0748159	0.5405651	0.2708333	2.2800811	2.2800811
06:57.7	574268	6.35303E+12	5.51716E+13	5368.99	0.0191744	0.0079925	0.0726383	0.5932559	0.2567494	2.2137171	2.2137171
12:00.6	574269	6.35303E+12	5.58958E+13	5366.55	0.0191744	0.0087789	0.0715165	0.5932559	0.247288	2.1795291	2.1795291
17:03.4	574270	6.35303E+12	5.60115E+13	5366.55	0.0191744	0.0082206	0.0715322	0.5932559	0.2716192	2.1800073	2.1800073
22:06.5	574271	6.35303E+12	5.6144E+13	5352.04	0.0191744	0.0080153	0.0711547	0.5932559	0.2543454	2.168505	2.168505
27:09.5	574271	6.35303E+12	5.6095E+13	5352.41	0.0191744	0.0078927	0.0711219	0.5932559	0.2479934	2.1705513	2.1705513
				5350.73	0.0191744		0.0711995		0.2442001	2.1698701	2.1698701

32:12.4	574271	6.35303E+12	5.6095E+13	5352.02	0.0191744	0.0080581	0.0712167	0.5932559	0.2493176	2.1703932	2.1703932
37:15.7	574273	6.35303E+12	5.53104E+13	5353.7	0.0191744	0.0084743	0.0722496	0.5932559	0.2621948	2.2018709	2.2018709
42:19.1	574273	6.35303E+12	5.53104E+13	5354.2	0.0191744	0.0105116	0.0722563	0.5932559	0.3252289	2.2020766	2.2020766
47:22.1	574274	6.35303E+12	5.53441E+13	5354.14	0.0191744	0.0118583	0.0722116	0.5932559	0.3668958	2.2007128	2.2007128
52:25.1	574274	6.35303E+12	5.53441E+13	5355.15	0.0191744	0.0169972	0.0722252	0.5932559	0.5258934	2.2011279	2.2011279
57:28.6	574274	6.35303E+12	5.53441E+13	5366.51	0.0191744	0.0145957	0.0723784	0.5932559	0.451591	2.2057972	2.2057972
02:31.9	574274	6.35303E+12	5.53441E+13	5367.34	0.0216519	0.009775	0.0723896	0.6699098	0.3024385	2.2061384	2.2061384
07:34.9	574274	6.35303E+12	5.53441E+13	5369.11	0.0216519	0.0089501	0.0724135	0.6699098	0.2769161	2.2068659	2.2068659
12:38.4	574274	6.35303E+12	5.53441E+13	5361.12	0.0216519	0.0155345	0.0723057	0.6699098	0.4806374	2.2035818	2.2035818
17:41.3	574274	6.35303E+12	5.53441E+13	5366.11	0.0216519	0.0159714	0.072373	0.6699098	0.4941551	2.2056328	2.2056328
22:44.6	574275	6.35303E+12	5.36343E+13	5369.98	0.0216519	0.015976	0.0747339	0.6699098	0.4942974	2.2775843	2.2775843
27:47.5	574275	6.35303E+12	5.36343E+13	5368.01	0.0216519	0.0157924	0.0747065	0.6699098	0.4886169	2.2767487	2.2767487
32:50.5	574277	6.35303E+12	5.50501E+13	5373.94	0.0216519	0.0199778	0.0728657	0.6699098	0.6181131	2.2206488	2.2206488
37:53.4	574279	6.35303E+12	5.54528E+13	5377.71	0.0216519	0.019191	0.0723873	0.6699098	0.5937695	2.2060669	2.2060669
42:56.1	574281	6.35303E+12	5.67946E+13	5384.52	0.0216519	0.0172445	0.0707666	0.6699098	0.5335448	2.1566766	2.1566766
47:59.0	574281	6.35303E+12	5.67946E+13	5380.73	0.0216519	0.0171053	0.0707168	0.6699098	0.529238	2.1551586	2.1551586
53:02.0	574282	6.35303E+12	5.6096E+13	5375.54	0.0216519	0.0134277	0.0715284	0.6699098	0.415453	2.1798939	2.1798939
58:05.2	574282	6.35303E+12	5.6096E+13	5378.27	0.0216519	0.018	0.0715648	0.6699098	0.55692	2.1810009	2.1810009
03:08.4	574283	6.35303E+12	5.56063E+13	5389.1	0.0235997	0.0178977	0.0723403	0.7301747	0.5537548	2.2046367	2.2046367
08:11.8	574283	6.35303E+12	5.56063E+13	5401.6	0.0235997	0.0199519	0.0725081	0.7301747	0.6173118	2.2097504	2.2097504
13:14.8	574283	6.35303E+12	5.56063E+13	5411.61	0.0235997	0.0198174	0.0726425	0.7301747	0.6131504	2.2138454	2.2138454
18:18.7	574284	6.35303E+12	5.64188E+13	5399.02	0.0235997	0.0211285	0.0714298	0.7301747	0.6537158	2.1768876	2.1768876
23:21.6	574284	6.35303E+12	5.64188E+13	5401.6	0.0235997	0.0206955	0.0714639	0.7301747	0.6403188	2.1779279	2.1779279
28:24.6	574284	6.35303E+12	5.64188E+13	5405.99	0.0235997	0.0201906	0.071522	0.7301747	0.6246972	2.1796979	2.1796979
38:30.0	574285	6.35303E+12	5.57835E+13	5401.12	0.0235997	0.0196938	0.0722714	0.7301747	0.6093262	2.2025372	2.2025372
43:33.2	574285	6.35303E+12	5.57835E+13	5401.12	0.0235997	0.0196938	0.0723101	0.7301747	0.6343226	2.2037157	2.2037157
48:36.5	574285	6.35303E+12	5.57835E+13	5404.01	0.0235997	0.0205017	0.0723135	0.7301747	0.6260523	2.2038176	2.2038176
53:39.7	574285	6.35303E+12	5.57835E+13	5404.26	0.0235997	0.0202344	0.0722566	0.7301747	0.6336326	2.2020845	2.2020845
58:42.8	574285	6.35303E+12	5.57835E+13	5405.56	0.0235997	0.0204578	0.0723309	0.7301747	0.6329643	2.2043478	2.2043478
03:45.8	574285	6.35303E+12	5.57835E+13	5405.7	0.0246624	0.0205258	0.0723327	0.7630547	0.6350683	2.2044049	2.2044049
08:49.5	574286	6.35303E+12	5.36818E+13	5416.95	0.0246624	0.0206883	0.0753209	0.7630547	0.640096	2.2954736	2.2954736
13:52.4	574287	6.35303E+12	5.50908E+13	5405.74	0.0246624	0.0206454	0.0733092	0.7630547	0.6389079	2.2275453	2.2275453
18:56.1	574287	6.35303E+12	5.50908E+13	5394.62	0.0246624	0.0206499	0.0732427	0.7630547	0.6402167	2.1652907	2.1652907
23:59.2	574288	6.35303E+12	5.6446E+13	5372.85	0.0246624	0.0206922	0.0710493	0.7630547	0.6403188	2.1705862	2.1705862
29:02.2	574288	6.35303E+12	5.6446E+13	5385.99	0.0246624	0.0206955	0.071223	0.7630547	0.6727191	2.1801747	2.1801747
34:05.7	574289	6.35303E+12	5.61643E+13	5382.78	0.0246624	0.0217427	0.0715377	0.7630547	0.6727191	2.1801747	2.1801747
39:08.7	574289	6.35303E+12	5.61643E+13	5380.01	0.0246624	0.0218238	0.0715009	0.7630547	0.6752284	2.1790528	2.1790528
44:11.8	574289	6.35303E+12	5.61643E+13	5375.01	0.0246624	0.0212482	0.0714344	0.7630547	0.6574193	2.1770277	2.1770277
54:17.2	574292	6.35303E+12	5.59818E+13	5380.19	0.0246624	0.0219149	0.0712105	0.7630547	0.678047	2.1862275	2.1862275
59:20.2	574293	6.35303E+12	5.63654E+13	5377.35	0.0246624	0.021873	0.0717363	0.7630547	0.6767506	2.1702049	2.1702049
04:23.7	574294	6.35303E+12	5.66874E+13	5388.44	0.0258801	0.0213278	0.0712105	0.8007303	0.6598821	2.1623271	2.1623271
09:26.5	574295	6.35303E+12	5.71185E+13	5388.44	0.0258801	0.021527	0.0704165	0.8007303	0.6660454	2.1460054	2.1460054
14:29.9	574298	6.35303E+12	5.77593E+13	5389.19	0.0258801	0.0216842	0.0696449	0.8007303	0.6709091	2.122492	2.122492
19:32.9	574298	6.35303E+12	5.77593E+13	5388.39	0.0258801	0.0240613	0.0696346	0.8007303	0.7444566	2.122177	2.122177
24:35.8	574298	6.35303E+12	5.77593E+13	5391.23	0.0258801	0.0222895	0.0696713	0.8007303	0.6896371	2.1232955	2.1232955
29:38.9	574298	6.35303E+12	5.77593E+13	5399.68	0.0258801	0.0257402	0.0697805	0.8007303	0.7964018	2.1266234	2.1266234
34:42.6	574300	6.35303E+12	5.74492E+13	5391.27	0.0258801	0.0264737	0.0700479	0.8007303	0.8190963	2.1347724	2.1347724

39:47.4	574301	6.35303E+12	5.7613E+13	5390.99	0.0258801	0.0845686	0.0698452	0.8007303	2.6165525	2.1285942	2.6165525
44:51.4	574302	6.35303E+12	5.77583E+13	5394.15	0.0258801	0.2208707	0.0697103	0.8007303	6.8337395	2.1244483	6.8337395
49:55.5	574302	6.35303E+12	5.77583E+13	5395.41	0.0258801	0.1569397	0.0697265	0.8007303	4.8557143	2.1249792	4.8557143
55:00.3	574304	6.35303E+12	5.7411E+13	5395.02	0.0258801	0.1785686	0.0701433	0.8007303	5.5249125	2.1376815	5.5249125
05:07.6	574305	6.35303E+12	5.8471E+13	5393.61	0.0282381	0.2199419	0.0688537	0.8736868	6.8050024	2.0983778	6.8050024
10:10.7	574305	6.35303E+12	5.8471E+13	5393.59	0.0282381	0.0379328	0.0688534	0.8736868	1.1736408	2.09837	2.09837
15:13.9	574307	6.35303E+12	5.89967E+13	5393.1	0.0282381	0.0282657	0.0682337	0.8736868	0.8745408	2.0794831	2.0794831
20:16.9	574309	6.35303E+12	6.00748E+13	5397.01	0.0282381	0.0260977	0.0670578	0.8736868	0.8074628	2.0436461	2.0436461
25:20.0	574309	6.35303E+12	6.00748E+13	5396.19	0.0282381	0.0259319	0.0670476	0.8736868	0.802333	2.0433356	2.0433356
30:22.8	574310	6.35303E+12	6.02983E+13	5397.48	0.0282381	0.030206	0.0688151	0.8736868	0.9345736	2.0362495	2.0362495
35:25.7	574311	6.35303E+12	6.01255E+13	5402.84	0.0282381	0.030209	0.0670736	0.8736868	0.9344158	2.044127	2.044127
40:29.7	574312	6.35303E+12	5.99055E+13	5397.01	0.0282381	0.0302509	0.0672522	0.8736868	0.9359628	2.0495721	2.0495721
45:32.5	574312	6.35303E+12	5.99055E+13	5395.01	0.0282381	0.0260271	0.0672223	0.8736868	0.8052785	2.0486608	2.0486608
55:37.6	574315	6.35303E+12	5.97623E+13	5391.82	0.0282381	0.0262949	0.0673436	0.8736868	0.8135642	2.0523565	2.0523565
00:42.0	574315	6.35303E+12	5.97623E+13	5397.9	0.0299687	0.2138963	0.0672946	0.9272316	6.6179515	2.0508644	6.6179515
05:45.0	574317	6.35303E+12	6.04051E+13	5388.49	0.0299687	0.0273972	0.0665859	0.9272316	0.851608	2.0292641	2.0292641
10:49.5	574319	6.35303E+12	6.0775E+13	5387.98	0.0299687	0.0493605	0.0661742	0.9272316	7.0356694	2.0167195	7.0356694
15:52.2	574320	6.35303E+12	6.21737E+13	5393.73	0.0299687	0.0375331	0.0647546	0.9272316	1.5272139	1.9734558	1.9734558
20:54.9	574320	6.35303E+12	6.21737E+13	5399.05	0.0299687	0.0307695	0.0648185	0.9272316	1.1612741	1.9754023	1.9754023
25:57.6	574320	6.35303E+12	6.21737E+13	5405.74	0.0299687	0.0283888	0.0648988	0.9272316	0.9520083	1.97785	1.97785
31:00.3	574321	6.35303E+12	6.17749E+13	5405.41	0.0299687	0.0283888	0.0653138	0.9272316	0.8783495	1.9904973	1.9904973
36:03.1	574321	6.35303E+12	6.17749E+13	5401.85	0.0299687	0.0282614	0.0652708	0.9272316	0.8744077	1.9891864	1.9891864
41:06.0	574321	6.35303E+12	6.17749E+13	5409.99	0.0299687	0.027866	0.0653692	0.9272316	0.8597174	1.9921839	1.9921839
46:08.9	574321	6.35303E+12	6.17749E+13	5408.8	0.0299687	0.0279693	0.0653548	0.9272316	0.8653701	1.9917457	1.9917457
51:11.6	574321	6.35303E+12	6.17749E+13	5412.57	0.0299687	0.0279898	0.0654003	0.9272316	0.8660044	1.9931339	1.9931339
56:14.5	574321	6.35303E+12	6.17749E+13	5407.34	0.0299687	0.0268645	0.0653371	0.9272316	0.8311876	1.991208	1.991208
01:17.4	574321	6.35303E+12	6.17749E+13	5400.73	0.0293113	0.0268945	0.0652573	0.9068916	0.83221158	1.9887739	1.9887739
06:20.2	574321	6.35303E+12	6.17749E+13	5395.3	0.0293113	0.027018	0.0651917	0.9068916	0.8359369	1.9867744	1.9867744
11:23.2	574321	6.35303E+12	6.17749E+13	5397.81	0.0293113	0.0267743	0.065222	0.9068916	0.8283968	1.9876987	1.9876987
16:26.3	574321	6.35303E+12	6.17749E+13	5397.93	0.0293113	0.0268461	0.0652234	0.9068916	0.8306183	1.9877429	1.9877429
21:29.6	574321	6.35303E+12	6.17749E+13	5392.62	0.0293113	0.0269721	0.0651593	0.9068916	0.8345168	1.9857875	1.9857875
26:32.5	574321	6.35303E+12	6.17749E+13	5393.89	0.0293113	0.0268715	0.0651746	0.9068916	0.8314042	1.9862552	1.9862552
31:35.4	574322	6.35303E+12	5.8824E+13	5396.27	0.0293113	0.0268167	0.0684743	0.9068916	0.8297087	2.0868162	2.0868162
36:38.4	574322	6.35303E+12	5.8824E+13	5393.1	0.0293113	0.0261239	0.0684341	0.9068916	0.8082735	2.0855903	2.0855903
41:41.3	574322	6.35303E+12	5.8824E+13	5393.7	0.0293113	0.0274601	0.0684417	0.9068916	0.8496155	2.0858223	2.0858223
46:44.3	574323	6.35303E+12	5.85421E+13	5398.48	0.0293113	0.0267306	0.0688332	0.9068916	0.8270448	2.0977221	2.0977221
51:47.3	574323	6.35303E+12	5.85421E+13	5406.39	0.0293113	0.0276187	0.068933	0.9068916	0.8545226	2.1007958	2.1007958
56:50.2	574324	6.35303E+12	5.81584E+13	5403.98	0.0293113	0.0303914	0.0693569	0.9068916	0.9403099	2.1137127	2.1137127
01:53.0	574326	6.35303E+12	5.98016E+13	5406.62	0.0303255	0.0359994	0.0674841	0.9068916	1.1138214	2.0566378	2.0566378
06:56.1	574326	6.35303E+12	5.98016E+13	5402.77	0.0303255	0.0287643	0.067436	0.938271	0.8899674	2.0551733	2.0551733
11:58.9	574327	6.35303E+12	5.96067E+13	5401.77	0.0303255	0.0276195	0.067644	0.938271	0.8545473	2.0615104	2.0615104
17:01.7	574327	6.35303E+12	5.96067E+13	5403.81	0.0303255	0.0285849	0.0676695	0.938271	0.7999506	2.0622889	2.0622889
22:04.9	574328	6.35303E+12	5.96752E+13	5405.43	0.0303255	0.0273178	0.0676122	0.938271	0.8452127	2.0605413	2.0605413
27:08.0	574328	6.35303E+12	5.96752E+13	5405.62	0.0303255	0.027105	0.0676145	0.938271	0.8386287	2.0606137	2.0606137
32:11.6	574329	6.35303E+12	5.94855E+13	5414.16	0.0303255	0.0272499	0.0679373	0.938271	0.8431119	2.0704516	2.0704516
37:14.5	574330	6.35303E+12	5.97035E+13	5414.16	0.0303255	0.0272366	0.0676893	0.938271	0.8427004	2.0628912	2.0628912
42:17.3	574331	6.35303E+12	5.96567E+13	5411.93	0.0303255	0.0259498	0.0677144	0.938271	0.8028868	2.0636583	2.0636583

47:20.1	574331	6.35303E+12	5.96567E+13	5411.28	0.0303255	0.0270709	0.0677063	0.938271	0.8375736	2.0634104	2.0634104
52:22.9	574333	6.35303E+12	5.9734E+13	5406.27	0.0303255	0.0270923	0.0675561	0.938271	0.8382358	2.0588333	2.0588333
57:25.6	574333	6.35303E+12	5.9734E+13	5401.15	0.0303255	0.0273697	0.0674921	0.938271	0.8468185	2.0568835	2.0568835
02:28.6	574334	6.35303E+12	5.92562E+13	5400.02	0.0291501	0.028349	0.0680221	0.9019041	0.8771181	2.0730351	2.0730351
07:32.0	574335	6.35303E+12	5.9018E+13	5400.05	0.0291501	0.0271441	0.068297	0.9019041	0.8398385	2.0814126	2.0814126
12:35.2	574337	6.35303E+12	6.04407E+13	5403.81	0.0291501	0.0271795	0.0667358	0.9019041	0.8409337	2.0338321	2.0338321
17:38.0	574338	6.35303E+12	6.00814E+13	5403.9	0.0291501	0.0269433	0.067136	0.9019041	0.8336257	2.0460298	2.0460298
22:41.3	574340	6.35303E+12	6.01388E+13	5404.53	0.0291501	0.0265047	0.0670798	0.9019041	0.8200554	2.0443159	2.0443159
27:44.1	574342	6.35303E+12	6.0482E+13	5405.01	0.0291501	0.0269789	0.0667051	0.9019041	0.8347272	2.0328944	2.0328944
32:47.4	574343	6.35303E+12	5.99395E+13	5399.97	0.0291501	0.0259921	0.0667246	0.9019041	0.8041956	2.0328982	2.0328982
37:50.1	574344	6.35303E+12	5.95861E+13	5399.01	0.0291501	0.0264856	0.0676328	0.9019041	0.8194645	2.0611697	2.0611697
42:52.9	574344	6.35303E+12	5.95861E+13	5399.01	0.0291501	0.027138	0.0676328	0.9019041	0.8396497	2.0611697	2.0611697
47:55.6	574344	6.35303E+12	5.95861E+13	5394.86	0.0291501	0.0264887	0.0675808	0.9019041	0.8195604	2.0595854	2.0595854
52:58.5	574344	6.35303E+12	5.95861E+13	5398.35	0.0291501	0.0266866	0.0676245	0.9019041	0.8256834	2.0609177	2.0609177
58:01.6	574346	6.35303E+12	5.84022E+13	5395.14	0.0282198	0.0266866	0.0689544	0.8731206	7.03161	2.1014468	7.03161
03:05.6	574346	6.35303E+12	5.84022E+13	5395.14	0.0282198	0.0266866	0.0689544	0.8731206	0.8317848	2.0931918	2.0931918
08:09.0	574347	6.35303E+12	5.86008E+13	5397.01	0.0282198	0.0266866	0.0689544	0.8731206	0.8341022	2.0950512	2.0950512
13:12.1	574347	6.35303E+12	5.86008E+13	5397.01	0.0282198	0.0266866	0.0689544	0.8731206	0.8387834	2.0909802	2.0909802
18:15.1	574348	6.35303E+12	5.87322E+13	5398.6	0.0282198	0.02711	0.0686109	0.8731206	0.8293962	2.0900429	2.0900429
23:18.2	574348	6.35303E+12	5.87322E+13	5396.18	0.0282198	0.0268066	0.0685802	0.8731206	1.1345729	2.0993542	2.0993542
28:22.4	574349	6.35303E+12	5.84595E+13	5396.23	0.0282198	0.0263655	0.0689007	0.8731206	0.8427004	2.0756546	2.0756546
33:25.3	574349	6.35303E+12	5.84595E+13	5395.06	0.0282198	0.0366701	0.0679653	0.8731206	0.7724109	2.071303	2.071303
38:28.1	574350	6.35303E+12	5.91267E+13	5395.03	0.0282198	0.0272366	0.0688857	0.8731206	0.7944773	2.070969	2.070969
43:31.1	574351	6.35303E+12	5.92508E+13	5395.02	0.0282198	0.0249648	0.0681081	0.8731206	0.7700811	2.0695753	2.0695753
48:33.9	574351	6.35303E+12	5.92508E+13	5394.15	0.0282198	0.0248895	0.0679086	0.8731206	0.776956	2.0699132	2.0699132
53:36.6	574351	6.35303E+12	5.92508E+13	5390.52	0.0282198	0.0248895	0.0679086	0.8731206	0.779063	2.0666958	2.0666958
58:39.4	574351	6.35303E+12	5.92508E+13	5391.4	0.0282198	0.0251117	0.0679197	0.8731206	0.7012737	2.0624611	2.0624611
03:42.2	574351	6.35303E+12	5.92508E+13	5383.02	0.0294796	0.0251798	0.0678141	0.9120988	0.7033714	2.0643232	2.0643232
08:45.1	574351	6.35303E+12	5.92508E+13	5371.99	0.0294796	0.0226656	0.0677362	0.9120988	0.7532838	2.0529247	2.0529247
13:48.0	574351	6.35303E+12	5.92508E+13	5376.84	0.0294796	0.0227334	0.0673622	0.9120988	0.7127029	2.0553472	2.0553472
18:50.8	574353	6.35303E+12	5.95341E+13	5372.72	0.0294796	0.0243466	0.0674417	0.9120988	0.7717179	2.0581021	2.0581021
23:53.6	574353	6.35303E+12	5.95341E+13	5379.06	0.0294796	0.0249424	0.0675321	0.9120988	0.7848983	2.0608686	2.0608686
28:56.9	574353	6.35303E+12	5.95341E+13	5386.27	0.0294796	0.0249424	0.0675321	0.9120988	0.7830976	2.0625766	2.0625766
33:59.8	574353	6.35303E+12	5.95341E+13	5393.51	0.0294796	0.0253684	0.0676229	0.9120988	0.7732649	2.0756429	2.0756429
39:02.6	574353	6.35303E+12	5.95341E+13	5397.98	0.0294796	0.0253102	0.0681077	0.9120988	0.7724822	2.0412523	2.0412523
44:05.8	574354	6.35303E+12	5.92005E+13	5401.73	0.0294796	0.0249924	0.0681077	0.9120988	0.770372	2.0430494	2.0430494
49:09.4	574356	6.35303E+12	6.01278E+13	5395.44	0.0294796	0.0249424	0.0681077	0.9120988	0.6821682	2.054282	2.054282
54:12.7	574356	6.35303E+12	6.01278E+13	5400.19	0.0294796	0.0248989	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
59:15.5	574357	6.35303E+12	5.98782E+13	5407.34	0.0294796	0.0220481	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
04:18.3	574357	6.35303E+12	5.98782E+13	5412.65	0.0358902	0.0218857	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
09:22.0	574358	6.35303E+12	5.94067E+13	5410.59	0.0358902	0.0216716	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
14:25.2	574359	6.35303E+12	5.99023E+13	5412.47	0.0358902	0.0219037	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
19:28.2	574360	6.35303E+12	6.0023E+13	5412.47	0.0358902	0.0219037	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
24:32.0	574360	6.35303E+12	6.0023E+13	5404.27	0.0358902	0.0219037	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
29:35.3	574361	6.35303E+12	5.95038E+13	5406.99	0.0358902	0.0228282	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
34:38.6	574361	6.35303E+12	5.95038E+13	5410.01	0.0358902	0.0225739	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993
39:41.7	574361	6.35303E+12	5.95038E+13	5424.76	0.0358902	0.0245993	0.0674068	0.9120988	0.6771436	2.0562993	2.0562993

44:44.7	574362	6.35303E+12	5.87448E+13	5432.99	0.0358902	0.0239225	0.0690331	1.1104428	0.7401622	2.1038472	2.1038472	2.1038472
49:48.5	574362	6.35303E+12	5.87448E+13	5431.52	0.0358902	0.0225293	0.0690145	1.1104428	0.6970565	2.103278	2.103278	2.103278
54:51.9	574363	6.35303E+12	5.80502E+13	5426.35	0.0358902	0.0241253	0.0697738	1.1104428	0.7464368	2.1264208	2.1264208	2.1264208
59:55.2	574363	6.35303E+12	5.80502E+13	5426.04	0.0358902	0.0269835	0.0697699	1.1104428	1.0111935	2.1262994	2.1262994	2.1262994
04:57.9	574364	6.35303E+12	5.78645E+13	5431.65	0.0269835	0.0482413	0.0700661	0.8348695	1.4925858	2.1353278	2.1353278	2.1353278
10:00.7	574364	6.35303E+12	5.78645E+13	5442.45	0.0269835	0.043395	0.0702054	0.8348695	1.3426413	2.1395736	2.1395736	2.1395736
15:04.3	574366	6.35303E+12	5.7531E+13	5432.6	0.0269835	0.0243861	0.0704846	0.8348695	0.7545059	2.1480807	2.1480807	2.1480807
20:07.3	574367	6.35303E+12	5.84533E+13	5443.24	0.0269835	0.0247503	0.0695083	0.8348695	0.7657743	2.1183292	2.1183292	2.1183292
25:11.1	574368	6.35303E+12	5.81378E+13	5430.99	0.0269835	0.0232247	0.0697283	0.8348695	0.7185722	2.125032	2.125032	2.125032
30:14.0	574368	6.35303E+12	5.81378E+13	5447.49	0.0269835	0.0215208	0.0699401	0.8348695	0.6565856	2.1314881	2.1314881	2.1314881
35:16.8	574369	6.35303E+12	5.7527E+13	5441.28	0.0269835	0.0212082	0.0706021	0.8348695	0.6561817	2.151664	2.151664	2.151664
40:20.2	574369	6.35303E+12	5.7527E+13	5444.99	0.0269835	0.0200685	0.0706503	0.8348695	0.6209194	2.153131	2.153131	2.153131
45:23.2	574370	6.35303E+12	5.73316E+13	5445.99	0.0269835	0.0196295	0.0709041	0.8348695	0.6209194	2.1608665	2.1608665	2.1608665
50:26.3	574370	6.35303E+12	5.73316E+13	5466.65	0.0269835	0.0196295	0.0716362	0.8348695	0.6073367	2.169064	2.169064	2.169064
55:29.5	574372	6.35303E+12	5.7029E+13	5473.18	0.0269835	0.0195841	0.0709624	0.8348695	0.6073367	2.1831762	2.1831762	2.1831762
00:32.6	574373	6.35303E+12	5.75391E+13	5471.01	0.0208048	0.0193404	0.0709729	0.6437005	0.6059321	2.1626439	2.1626439	2.1626439
05:35.5	574373	6.35303E+12	5.75391E+13	5461.19	0.0208048	0.0197241	0.0714138	0.6437005	0.598392	2.1629641	2.1629641	2.1629641
10:38.5	574374	6.35303E+12	5.70787E+13	5460.95	0.0208048	0.019458	0.0717558	0.6437005	0.6020305	2.1764965	2.1764965	2.1764965
15:41.4	574374	6.35303E+12	5.70787E+13	5461.19	0.0208048	0.0214581	0.0717129	0.6437005	0.6020305	2.1764965	2.1764965	2.1764965
20:44.2	574376	6.35303E+12	5.68162E+13	5456.87	0.0208048	0.019573	0.0716335	0.6437005	0.6055886	2.1855137	2.1855137	2.1855137
25:47.0	574376	6.35303E+12	5.68162E+13	5458.6	0.0208048	0.019573	0.0716335	0.6437005	0.6123521	2.1830955	2.1830955	2.1830955
30:49.8	574376	6.35303E+12	5.68162E+13	5452.56	0.0208048	0.0197916	0.0723538	0.6437005	0.6804108	2.2050485	2.2050485	2.2050485
35:52.5	574377	6.35303E+12	5.63276E+13	5460.02	0.0208048	0.021309	0.0724434	0.6437005	0.6593005	2.2077785	2.2077785	2.2077785
40:55.3	574377	6.35303E+12	5.63276E+13	5466.78	0.0208048	0.0213163	0.0722982	0.6437005	0.6595263	2.2033529	2.2033529	2.2033529
45:58.1	574378	6.35303E+12	5.65074E+13	5473.24	0.0208048	0.0197517	0.0722507	0.6437005	0.6111176	2.2019037	2.2019037	2.2019037
56:03.2	574378	6.35303E+12	5.65074E+13	5469.64	0.0208048	0.0188214	0.0722507	0.6437005	0.5823341	2.1750424	2.1750424	2.1750424
01:36.8	574383	6.35303E+12	5.72964E+13	5478.36	0.0179961	0.0187891	0.0723693	0.5567993	0.5813348	2.2002079	2.2002079	2.2002079
06:39.7	574384	6.35303E+12	5.65611E+13	5470.62	0.0179961	0.0188495	0.0723235	0.5567993	0.5832035	2.2041694	2.2041694	2.2041694
11:42.6	574384	6.35303E+12	5.65611E+13	5480.47	0.0179961	0.0183258	0.0723819	0.5567993	0.5670003	2.2059028	2.2059028	2.2059028
21:48.0	574384	6.35303E+12	5.65611E+13	5484.78	0.0179961	0.0179839	0.0724142	0.5567993	0.5564219	2.2068882	2.2068882	2.2068882
26:51.2	574384	6.35303E+12	5.65611E+13	5487.23	0.0179961	0.018281	0.0741359	0.5567993	0.5656141	2.2593577	2.2593577	2.2593577
31:54.4	574385	6.35303E+12	5.52675E+13	5489.21	0.0179961	0.0187203	0.0745026	0.5567993	0.5792061	2.2705332	2.2705332	2.2705332
36:57.3	574386	6.35303E+12	5.5002E+13	5489.86	0.0179961	0.0183036	0.0746893	0.5567993	0.5663134	2.2762247	2.2762247	2.2762247
42:00.1	574387	6.35303E+12	5.4816E+13	5485.01	0.0179961	0.0184508	0.0748427	0.5567993	0.5708678	2.2808975	2.2808975	2.2808975
47:03.0	574387	6.35303E+12	5.4816E+13	5496.27	0.0179961	0.0184047	0.0747957	0.5567993	0.5694414	2.2794658	2.2794658	2.2794658
52:05.9	574387	6.35303E+12	5.4816E+13	5492.82	0.0179961	0.0184153	0.0757651	0.5567993	0.5697694	2.3090086	2.3090086	2.3090086
57:09.3	574388	6.35303E+12	5.41076E+13	5492.11	0.0179961	0.0184147	0.0757758	0.5567993	0.5697508	2.3093366	2.3093366	2.3093366
02:12.6	574388	6.35303E+12	5.41076E+13	5492.89	0.0170398	0.0184147	0.0757758	0.5567993	0.5691165	2.3103456	2.3103456	2.3103456
07:15.4	574388	6.35303E+12	5.41076E+13	5495.29	0.0170398	0.0183942	0.0758089	0.5567993	0.5688814	2.3378941	2.3378941	2.3378941
12:18.2	574389	6.35303E+12	5.34819E+13	5496.51	0.0170398	0.0183866	0.0767129	0.5567993	0.5841905	2.2966372	2.2966372	2.2966372
17:21.0	574392	6.35303E+12	5.44667E+13	5498.94	0.0170398	0.0188814	0.0753591	0.5567993	0.6012972	2.3023534	2.3023534	2.3023534
22:23.9	574393	6.35303E+12	5.4543E+13	5520.34	0.0170398	0.0194343	0.0755467	0.5567993	0.6000565	2.3112745	2.3112745	2.3112745
27:26.7	574393	6.35303E+12	5.4543E+13	5541.73	0.0170398	0.0193942	0.0758394	0.5567993	0.6062322	2.3120627	2.3120627	2.3120627
32:29.9	574393	6.35303E+12	5.4543E+13	5543.62	0.0170398	0.0195938	0.0758653	0.5567993	0.6049636	2.3392162	2.3392162	2.3392162
37:32.8	574394	6.35303E+12	5.4543E+13	5543.62	0.0170398	0.0195528	0.0767563	0.5567993	0.6137351	2.3219053	2.3219053	2.3219053
42:35.6	574394	6.35303E+12	5.38779E+13	5540.34	0.0170398	0.0195528	0.0767563	0.5567993	0.6051493	2.2693225	2.2693225	2.2693225
47:38.5	574395	6.35303E+12	5.38779E+13	5499.34	0.0170398	0.0195588	0.0744629	0.5567993				
			5.53825E+13	5524.89	0.0170398							

52:42.0	574395	6.35303E+12	5.53825E+13	5516.19	0.0170398	0.0195968	0.0743456	0.5272114	0.606325	2.265749	2.265749
57:45.2	574395	6.35303E+12	5.53825E+13	5519.38	0.0170398	0.0192475	0.0743886	0.5272114	0.5955177	2.2670593	2.2670593
02:48.0	574395	6.35303E+12	5.53825E+13	5528.44	0.0176772	0.0192253	0.0745107	0.5469326	0.5948308	2.2707806	2.2707806
07:50.8	574395	6.35303E+12	5.53825E+13	5533.27	0.0176772	0.0191698	0.0745758	0.5469326	0.5931136	2.2727645	2.2727645
12:53.8	574396	6.35303E+12	5.44713E+13	5531.02	0.0176772	0.0189901	0.0757925	0.5469326	0.5875537	2.3098433	2.3098433
17:56.7	574396	6.35303E+12	5.44713E+13	5545.02	0.0176772	0.0189449	0.0759843	0.5469326	0.5861552	2.3156899	2.3156899
22:59.6	574396	6.35303E+12	5.44713E+13	5548.95	0.0176772	0.0189618	0.0760382	0.5469326	0.5866781	2.3173312	2.3173312
28:02.4	574397	6.35303E+12	5.38389E+13	5554.01	0.0176772	0.0190515	0.0770014	0.5469326	0.5894534	2.3466856	2.3466856
33:05.6	574397	6.35303E+12	5.38389E+13	5549.85	0.0176772	0.0186935	0.0769437	0.5469326	0.5783769	2.3449279	2.3449279
38:08.5	574397	6.35303E+12	5.38389E+13	5562.7	0.0176772	0.0189393	0.0771218	0.5469326	0.5859819	2.3503573	2.3503573
43:13.3	574397	6.35303E+12	5.38389E+13	5576.66	0.0176772	0.0188386	0.0773154	0.5469326	0.5828663	2.3562557	2.3562557
48:16.3	574397	6.35303E+12	5.38389E+13	5591.65	0.0176772	0.0189326	0.0775232	0.5469326	0.5857746	2.3625893	2.3625893
53:19.2	574397	6.35303E+12	5.38389E+13	5576.07	0.0176772	0.0194225	0.0773072	0.5469326	0.6009321	2.3560064	2.3560064
58:22.3	574398	6.35303E+12	5.24135E+13	5579.93	0.0176772	0.0194733	0.0794646	0.5469326	0.6025039	2.4217554	2.4217554
03:25.2	574400	6.35303E+12	5.22154E+13	5582.01	0.0178805	0.0197824	0.0797958	0.5532227	0.6120675	2.431849	2.431849
13:30.3	574400	6.35303E+12	5.19602E+13	5575.84	0.0178805	0.0197535	0.0800991	0.5532227	0.6111733	2.441092	2.441092
18:33.2	574400	6.35303E+12	5.19602E+13	5579.19	0.0178805	0.0198435	0.0801472	0.5532227	0.6139579	2.4425586	2.4425586
23:36.6	574401	6.35303E+12	5.14241E+13	5571.19	0.0178805	0.0198432	0.0808667	0.5532227	0.6139486	2.4644852	2.4644852
28:40.0	574401	6.35303E+12	5.14241E+13	5570.27	0.0178805	0.0199995	0.0808533	0.5532227	0.6187845	2.4640783	2.4640783
38:45.6	574403	6.35303E+12	5.16659E+13	5613.91	0.0178805	0.0206986	0.0811054	0.5532227	0.6404147	2.4717605	2.4717605
43:48.7	574404	6.35303E+12	5.22163E+13	5628.79	0.0178805	0.0201896	0.0804633	0.5532227	0.6246662	2.45219	2.45219
48:51.6	574405	6.35303E+12	5.26766E+13	5629.74	0.0178805	0.020244	0.0797736	0.5532227	0.6855623	2.4311707	2.4311707
53:54.6	574406	6.35303E+12	5.44332E+13	5687.49	0.0178805	0.0201642	0.0777176	0.5532227	0.6263494	2.3768473	2.3768473
58:57.4	574407	6.35303E+12	5.44179E+13	5665.95	0.0186939	0.019061	0.0777785	0.5532227	0.6263494	2.3768473	2.3768473
04:00.3	574407	6.35303E+12	5.44179E+13	5670.39	0.0186939	0.019061	0.0777785	0.5532227	0.6238803	2.3685147	2.3685147
09:03.7	574408	6.35303E+12	5.43366E+13	5670.17	0.0186939	0.0196968	0.0778918	0.5783893	0.5897473	2.3703707	2.3703707
14:06.8	574409	6.35303E+12	5.45039E+13	5709.88	0.0186939	0.0199734	0.0781965	0.5783893	0.609419	2.3738241	2.3738241
19:09.8	574409	6.35303E+12	5.45039E+13	5681.29	0.0186939	0.0202197	0.077805	0.5783893	0.617977	2.3831101	2.3831101
24:13.3	574409	6.35303E+12	5.45039E+13	5681.4	0.0186939	0.022567	0.077805	0.5783893	0.6255975	2.3711776	2.3711776
34:18.6	574410	6.35303E+12	5.4739E+13	5723.04	0.0186939	0.021648	0.0780402	0.5783893	0.698223	2.3712235	2.3712235
39:21.6	574410	6.35303E+12	5.4739E+13	5712.44	0.0186939	0.0217271	0.0780402	0.5783893	0.6697891	2.3783446	2.3783446
44:26.0	574410	6.35303E+12	5.4739E+13	5766.56	0.0186939	0.0214755	0.0780402	0.5783893	0.6722365	2.3739395	2.3739395
49:30.2	574410	6.35303E+12	5.4739E+13	5752.64	0.0186939	0.0230133	0.0786336	0.5783893	0.664452	2.3964304	2.3964304
54:33.3	574411	6.35303E+12	5.33843E+13	5785.23	0.0186939	0.0235469	0.0808902	0.5783893	0.7120315	2.3906456	2.3906456
59:36.0	574412	6.35303E+12	5.33495E+13	5707.59	0.0235949	0.0445382	0.0808422	0.5783893	0.7285411	2.4652002	2.4652002
04:38.7	574412	6.35303E+12	5.33495E+13	5698.98	0.0235949	0.0251205	0.0798566	0.5783893	1.3780119	2.4637378	2.4637378
09:41.6	574412	6.35303E+12	5.33495E+13	5716.84	0.0235949	0.0222209	0.0797362	0.7300262	0.7772283	2.4337024	2.4337024
14:44.9	574412	6.35303E+12	5.25253E+13	5727.04	0.0235949	0.023342	0.079986	0.7300262	0.696874	2.4300311	2.4300311
19:47.8	574413	6.35303E+12	5.25253E+13	5727.44	0.0235949	0.0235409	0.081386	0.7300262	0.7222015	2.4376465	2.4376465
24:51.0	574413	6.35303E+12	5.25253E+13	5735.97	0.0235949	0.0235409	0.0813917	0.7300262	0.7283554	2.4803111	2.4803111
29:53.8	574413	6.35303E+12	5.25253E+13	5735.97	0.0235949	0.0235409	0.0815129	0.7300262	0.6875146	2.4804844	2.4804844
34:56.6	574414	6.35303E+12	5.19701E+13	5739.52	0.0235949	0.0253504	0.0824347	0.7300262	0.7904335	2.4841786	2.4841786
39:59.3	574415	6.35303E+12	5.18073E+13	5733.01	0.0235949	0.0256234	0.0826	0.7300262	0.7843414	2.5122723	2.5122723
45:02.1	574418	6.35303E+12	5.19586E+13	5730.9	0.0235949	0.0255253	0.0823292	0.7300262	0.792788	2.5173089	2.5173089
50:05.4	574420	6.35303E+12	5.25895E+13	5722.12	0.0235949	0.0224989	0.0812169	0.7300262	0.7897528	2.5090566	2.5090566
55:08.2	574421	6.35303E+12	5.25734E+13	5697.57	0.0235949	0.0363746	0.0808932	0.7300262	0.696116	2.4751591	2.4751591
00:11.2	574421	6.35303E+12	5.25734E+13	5676.99	0.0269152	0.023551	0.080601	0.8327563	1.1254301	2.4652918	2.4652918

05:14.1	574423	6.35303E+12	5.29406E+13	5669.12	0.0269152	0.0218688	0.0799309	0.8327563	0.6766207	2.4359674	2.4359674
15:19.2	574424	6.35303E+12	5.28202E+13	5679.07	0.0269152	0.0283279	0.0802538	0.8327563	0.8764652	2.4458059	2.4458059
20:22.3	574425	6.35303E+12	5.23532E+13	5686.98	0.0269152	0.0487423	0.0810825	0.8327563	1.5080868	2.471061	2.471061
25:27.1	574426	6.35303E+12	5.30049E+13	5674.69	0.0269152	0.2374762	0.0799125	0.8327563	7.3475136	2.435404	7.3475136
30:31.1	574427	6.35303E+12	5.28466E+13	5692.52	0.0269152	0.2299546	0.0804036	0.8327563	7.1147953	2.4503724	7.1147953
35:34.0	574427	6.35303E+12	5.28466E+13	5694.01	0.0269152	0.0490713	0.0804247	0.8327563	1.518266	2.4510138	2.4510138
40:36.8	574428	6.35303E+12	5.2354E+13	5713.35	0.0269152	0.0279617	0.0814571	0.8327563	0.865135	2.4824794	2.4824794
45:39.8	574428	6.35303E+12	5.2354E+13	5716.19	0.0269152	0.0282458	0.0814976	0.8327563	0.8739251	2.4837134	2.4837134
50:42.7	574428	6.35303E+12	5.2354E+13	5717.38	0.0269152	0.0284795	0.0815146	0.8327563	0.8811557	2.4842305	2.4842305
55:45.7	574429	6.35303E+12	5.15634E+13	5710.01	0.0269152	0.0240423	0.0826578	0.8327563	0.7438688	2.5190709	2.5190709
00:48.6	574429	6.35303E+12	5.15634E+13	5698.38	0.0269152	0.0225554	0.0824894	0.8521062	0.6978641	2.5139401	2.5139401
05:51.3	574429	6.35303E+12	5.15634E+13	5709.41	0.0275406	0.0225554	0.0826491	0.8521062	0.6978641	2.5188062	2.5188062
10:54.1	574430	6.35303E+12	5.12815E+13	5715.13	0.0275406	0.023496	0.0831866	0.8521062	0.7269662	2.5351866	2.5351866
15:58.2	574430	6.35303E+12	5.12815E+13	5712.23	0.0275406	0.023838	0.0831444	0.8521062	0.7375477	2.5339002	2.5339002
21:01.2	574430	6.35303E+12	5.12815E+13	5713.4	0.0275406	0.0238314	0.0831614	0.8521062	0.7373435	2.5344192	2.5344192
26:05.1	574430	6.35303E+12	5.12815E+13	5723.95	0.0275406	0.0239138	0.0833315	0.8521062	0.739893	2.5390991	2.5390991
31:08.2	574430	6.35303E+12	5.12815E+13	5735.36	0.0275406	0.0247866	0.0834811	0.8521062	0.7668974	2.5441605	2.5441605
36:11.1	574430	6.35303E+12	5.12815E+13	5739.01	0.0275406	0.0244687	0.0835342	0.8521062	0.7570616	2.5457796	2.5457796
41:13.9	574430	6.35303E+12	5.12815E+13	5741.24	0.0275406	0.024823	0.0835666	0.8521062	0.7680236	2.5467688	2.5467688
46:16.8	574430	6.35303E+12	5.12815E+13	5724.65	0.0275406	0.0479102	0.0833252	0.8521062	1.4823416	2.5394096	2.5394096
51:19.5	574432	6.35303E+12	4.99455E+13	5726.23	0.0275406	0.0287101	0.0855777	0.8521062	0.8882905	2.6080579	2.6080579
56:22.3	574432	6.35303E+12	4.99455E+13	5715.44	0.0275406	0.0476762	0.0854165	0.8521062	1.4751016	2.6031435	2.6031435
01:25.2	574432	6.35303E+12	4.99455E+13	5710.99	0.0275178	0.0268429	0.08535	0.8514007	0.8305193	2.6011167	2.6011167
06:28.2	574432	6.35303E+12	4.98413E+13	5720.19	0.0275178	0.023935	0.0856661	0.8514007	0.7405489	2.6107513	2.6107513
11:31.5	574435	6.35303E+12	4.97656E+13	5727.69	0.0275178	0.0248874	0.085909	0.8514007	0.7700162	2.6181535	2.6181535
16:34.7	574435	6.35303E+12	4.97656E+13	5726.31	0.0275178	0.0274311	0.0858883	0.8514007	0.8487182	2.6175227	2.6175227
21:37.9	574437	6.35303E+12	4.98223E+13	5731.36	0.0275178	0.0263376	0.0857628	0.8514007	0.8148853	2.6136992	2.6136992
26:41.0	574438	6.35303E+12	4.9928E+13	5735.02	0.0275178	0.0483454	0.0857391	0.8514007	1.4958067	2.6129777	2.6129777
31:44.0	574440	6.35303E+12	4.96931E+13	5745.06	0.0275178	0.0271616	0.0862952	0.8514007	0.8403799	2.6299251	2.6299251
36:47.1	574441	6.35303E+12	5.04581E+13	5742.56	0.0275178	0.0269363	0.0849499	0.8514007	0.8334091	2.5889252	2.5889252
41:50.0	574441	6.35303E+12	5.04581E+13	5743.71	0.0275178	0.0484523	0.0849669	0.8514007	1.4991142	2.5894437	2.5894437
46:52.9	574442	6.35303E+12	5.28842E+13	5750.85	0.0275178	0.0347258	0.0811698	0.8514007	1.0744163	2.4737229	2.4737229
51:56.2	574442	6.35303E+12	5.28842E+13	5746.02	0.0275178	0.0267711	0.0811016	0.8514007	0.8282978	2.4716453	2.4716453
56:59.0	574443	6.35303E+12	5.28228E+13	5737.61	0.0275178	0.0256417	0.0810771	0.8514007	0.7933542	2.4708977	2.4708977
02:02.6	574443	6.35303E+12	5.28228E+13	5735.06	0.0300242	0.0258787	0.0810411	0.9289487	0.800687	2.4697995	2.4697995
07:05.8	574443	6.35303E+12	5.28228E+13	5735.1	0.0300242	0.0247432	0.0810416	0.9289487	0.7655546	2.4698168	2.4698168
12:08.7	574443	6.35303E+12	5.28228E+13	5735.91	0.0300242	0.0249703	0.0813357	0.9289487	0.7725811	2.4787786	2.4787786
17:11.4	574443	6.35303E+12	5.28228E+13	5755.91	0.0300242	0.0249703	0.0813357	0.9289487	0.7725811	2.4787786	2.4787786
22:14.5	574444	6.35303E+12	5.21447E+13	5760.01	0.0300242	0.0252751	0.0813936	0.9289487	0.7820116	2.4805442	2.4805442
27:17.4	574444	6.35303E+12	5.21447E+13	5754.45	0.0300242	0.0251352	0.0823724	0.9289487	0.7776831	2.510372	2.510372
32:20.3	574444	6.35303E+12	5.19166E+13	5755.01	0.0300242	0.0280841	0.0825583	0.9289487	0.8689221	2.5160389	2.5160389
37:23.3	574445	6.35303E+12	5.17083E+13	5756.68	0.0300242	0.0278962	0.0827425	0.9289487	1.0704714	2.5216513	2.5216513
42:26.9	574446	6.35303E+12	5.17083E+13	5756.94	0.0300242	0.0345983	0.0832153	0.9289487	0.8631084	2.5360608	2.5360608
47:29.7	574446	6.35303E+12	5.17083E+13	5755.95	0.0300242	0.0266725	0.0831036	0.9289487	0.8252472	2.5326557	2.5326557
52:33.2	574446	6.35303E+12	5.19511E+13	5743.01	0.0300242	0.0268138	0.0830893	0.9289487	0.829619	2.5322202	2.5322202
57:36.1	574448	6.35303E+12	5.19511E+13	5743.01	0.0300242	0.0267197	0.082515	0.9289487	0.8267075	2.5147176	2.5147176
02:39.4	574448	6.35303E+12	5.19511E+13	5714.06	0.0300242	0.0300574	0.082099	0.9289487	0.929976	2.5020411	2.5020411
				5709.16	0.0291971	0.0270146	0.0820286	0.9033583	0.8358317	2.4998955	2.4998955

07:42.2	574449	6.35303E+12	5.17328E+13	5699.99	0.0291971	0.0251716	0.0822425	0.9033583	0.7788093	2.5064137	2.5064137	2.5064137
12:45.4	574449	6.35303E+12	5.17328E+13	5715.31	0.0291971	0.02575	0.0824635	0.9033583	0.796705	2.5131502	2.5131502	2.5131502
17:48.3	574450	6.35303E+12	5.16724E+13	5717.01	0.0291971	0.0260891	0.0825845	0.9033583	0.8071968	2.5168369	2.5168369	2.5168369
22:51.1	574450	6.35303E+12	5.16724E+13	5712.98	0.0291971	0.0257711	0.0825263	0.9033583	0.7973578	2.5150627	2.5150627	2.5150627
27:54.3	574450	6.35303E+12	5.16724E+13	5722.03	0.0291971	0.0258512	0.082657	0.9033583	0.7998361	2.5190469	2.5190469	2.5190469
32:57.1	574450	6.35303E+12	5.16724E+13	5727.15	0.0291971	0.0255716	0.0827731	0.9033583	0.7911853	2.5213009	2.5213009	2.5213009
38:00.1	574451	6.35303E+12	5.07309E+13	5728.02	0.0291971	0.0261372	0.0842791	0.9033583	0.808685	2.5684819	2.5684819	2.5684819
43:03.0	574453	6.35303E+12	5.08262E+13	5712.01	0.0291971	0.0262532	0.083886	0.9033583	0.812274	2.5565013	2.5565013	2.5565013
48:06.4	574454	6.35303E+12	5.11925E+13	5714.36	0.0291971	0.0250628	0.08332	0.9033583	0.775443	2.5392517	2.5392517	2.5392517
53:09.2	574454	6.35303E+12	5.11925E+13	5702.85	0.0291971	0.0243144	0.0831522	0.9033583	0.7522875	2.5341371	2.5341371	2.5341371
58:12.0	574454	6.35303E+12	5.11925E+13	5709.89	0.0291971	0.0240068	0.0832548	0.9033583	0.7427704	2.5372654	2.5372654	2.5372654
03:14.8	574454	6.35303E+12	5.11925E+13	5717.23	0.0316183	0.0251727	0.0833618	0.9782702	0.7788433	2.540527	2.540527	2.540527
08:17.8	574454	6.35303E+12	5.11925E+13	5706.69	0.0316183	0.0241637	0.0832082	0.9782702	0.7476249	2.5358434	2.5358434	2.5358434
13:20.8	574454	6.35303E+12	5.11925E+13	5717.65	0.0316183	0.0244866	0.083368	0.9782702	0.7576154	2.5407136	2.5407136	2.5407136

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A would-be inventor's proof of conception, however, must be more than simply his/her testimony. "To prove [his or her] contribution, the purported inventor must provide corroborating evidence of any asserted contributions to the conception." *Acromed*, 253 F.3d at 1379 (internal citations and quotations omitted); *see also Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1461 (Fed. Cir. 1998). Indeed, a would-be inventor's testimony regarding their own inventorship claim is "regarded with skepticism." *Scott*, 889 F. Supp. 2d at 664. Would-be inventors, therefore, must supply evidence to corroborate their testimony. *Symantec*, 552 F.3d at 1295. The sufficiency of the corroborating evidence is evaluated under a rule of reason analysis, which requires that an evaluation of all pertinent evidence be made so that a sound determination of the credibility of the alleged inventor's story may be reached. *Id.*; *Gemstar*, 383 F.3d at 1382.

b. Claim Construction

“When the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008). A district court “may engage in claim construction during various phases of litigation” and is “well within its power to clarify, supplement, and even alter its construction” of disputed terms “in its summary judgment order.” *Level Sleep LLC v. Sleep No. Corp.*, No. 2020-1718, 2021 WL 2934816, at *3 (Fed. Cir. July 13, 2021).

“Words of a claim are generally given their ordinary and customary meaning, which is the meaning a term would have to a person of ordinary skill in the art after reviewing the intrinsic record at the time of the invention.” *O2 Micro*, 521 F.3d at 1360 (citing *Philips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005)). “A determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary meaning’ may be inadequate when a term has more than one ‘ordinary’ meaning or when reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute.” *Id.* at 1361. “To determine the meaning of the claims, courts start by considering the

(e.g. “load-only”) to be designated a CLR, the CLR designation had been available within ERCOT for nearly twenty years. Ex. S, at 31.

The CLR designation would allow Lancium’s Bitcoin mining datacenters, once registered, to operate as Storms’ BearBox system and sell options to turn off its miners under certain conditions, and also sell power back to the grid. *Id.* at 24-28. During these commercialization efforts, Lancium realized operating its Bitcoin miners as Storms’ BearBox system, with a CLR designation, would be incredibly profitable, but even more so if there was no other Bitcoin miners doing it. SSF ¶ 11; Ex. R, LANCIUM00033139 (“More importantly, when we bid into this [CLR] category we will be the only bidder, and therefore our award level should not be diminished”); Ex. Y, at LANCIUM00031222 (“first and only” CLR “therefore our revenue ... would go up”); Ex. H, Cline Dep. at 166. A few days later, Lancium filed an application for the ’433 Patent.

4. Lancium filed the ’433 patent to monopolize Storms’ portions of the system that Storms communicated to it

About two months after first commercializing some of Storms’ BearBox system features, Lancium filed a provisional patent application that would eventually support the ’433 Patent. D.I. 151 Ex. 17, ’433 Patent at cover page. In general, the ’433 Patent discloses example embodiments which enable a computing system to adjust power consumption based on a power option agreement, and using some combinations of power thresholds, time intervals, and monitored conditions. The ’433 Patent provides an overview of this aspect of the disclosure:

Examples relate to adjusting load power consumption based on a power option agreement. A computing system may receive power option data that is based on a power option agreement and specify minimum power thresholds associated with time intervals. The computing system may determine a performance strategy for a load (e.g., set of computing systems) based on a combination of the power option data and one or more monitored conditions. The performance strategy may specify a power consumption target for the load for each time interval such that each power consumption target is equal to or greater than the minimum power threshold associated with each

applies this very same analysis in his expert reports. In fact, in Defendants’ expert’s rebuttal report, Dr. Mark Ehsani, in offering his criticisms of Dr. McClellan’s opinions, performs no claim construction of his own, and says nothing of McClellan’s application of the “plain and ordinary meaning of the claim terms.” Ex. J, Ehsani Report at ¶ 43.

Second, the Court should reject Lancium’s proposed constructions of the terms “power option agreement” and “minimum power threshold” because they clash with the plain language of the claims and the intrinsic record.⁵

a. Power Option Agreement

Defendants proposed construction for “power option agreement” is inconsistent with the term’s plain and ordinary meaning because the phrase, “such that the load must use at least the amount of power subject to the option during the time interval” is internally inconsistent with the plain language of the claim and not supported by the specification.

Lancium’s proposed definition is internally inconsistent because it does not allow for scenarios in which the option is exercised by a power entity. Specifically, if the power entity “reduces the amount of power delivered to the load” during a time interval, that power is no longer accessible to the load, and it is impossible for the load to continuing using the diverted power. Yet under Lancium’s proposed construction, the load still “must” use that power for the duration of the time interval. In other words, Lancium’s proposal requires the system to use power it is not receiving.

Lancium’s proposed definition is also inconsistent with the remaining language of the claim, inviting confusion. The terms Lancium cherry-picked for construction are set forth within a larger limitation recited in claim 1, specifically that the system “receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum

⁵ Even if the Court does adopt Lancium’s proposed constructions for these two terms, it would not affect Plaintiffs’ experts’ opinions, or impact Plaintiffs’ ability to meet its burdens of proof.

technique to show the Bitcoin emanating from the box of miners (highlighted in orange) and the various functionality of his software (highlighted in purple). Because the generator business model is to generate, sell and deliver power to the grid, a POSA would have understood (1) the generator already had both the functional capacity and compliance with existing regulatory/administrative requirements to do so, and (2) that this disclosure reflects the generator curtailing power delivered to the Bearbox in order to perform the sellback operation. As Dr. McClellan explained:

Q: But what is the entity selling the power back?

A: The thing that's not doing the bitcoin mining.

Q: So the generator?

A: Yeah, that's selling the power that you've contracted to provide. That's passing the power through to the market rather than using it to mine bitcoin. That's the markup on the pass through. This data here [the .CSV file provided to Lancium] is just -- this lays out the whole scheme. It's great.

Ex. U, McClellan Dep. at 215:4-12; *see also*, Ex. U, McClellan Dep. at 67:2-68:16, 164:11-166:12.

At a minimum, the documents communicated to Lancium raise a material question of fact. SSF ¶ 5.

a. Storms' system as described in the documents he communicated to Lancium meets Lancium's constructions even if there were not corrected.

When the generator performs sell back as shown in the documentation, Storms' BearBox system literally meets each aspect of these limitations, even if Lancium's proposed construction were not modified. Specifically, Storms' BearBox system involved "an agreement between a power entity associated with the delivery of power to a load [the generator/generation assets] and the load [BearBox], wherein the load [BearBox] provides the power entity [the generator/generation assets] with the option to reduce the amount of power delivered to the load up to an agreed amount of power [full curtailment of "minimum power threshold"] during an agreed upon time interval [during a 5-minute interval when sell-back is appropriate], such that the load must use at least the amount of power subject to the option during the time interval [mine Bitcoin when energy is not being curtailed by the generator]." Storms' BearBox system also used, at least in one implementation, 30.94kW of

power as “a minimum amount of power a load must use during an associated time interval.” In other words, when the generator sells back power to the grid, it fully curtails the delivery to Storms that otherwise would have been used to mine Bitcoin—precisely the subject matter Lancium alleges is recited in the claim. Stated yet another way, the Storms documents describe a “minimum power threshold” of 30.94 kW that is always used by Storms for mining unless the delivery of power is curtailed by the generator in accordance with a “power option agreement” between those two entities.

b. Lancium misrepresents both the underlying evidence and the requirements of the claims.

Lancium contends, without citation, that Dr. McClellan does not explain how the materials Storms provided “to McNamara disclose or convey the properly construed requirements of the claims.” D.I. 149 at 21. This argument ignores 27 pages of Dr. McClellan’s analysis in his initial report alone showing how the information Storms communicated to Lancium disclosed each and every limitation recited in the claims of the ’433 Patent. D.I. 151 Ex. 3, McClellan Report at 53-80.

Lancium also is wrong when it argues “the claims set forth requirements that a load (e.g., a Bitcoin mining operation) must use the amount of power set by the minimum power thresholds regardless of profitability.” First, as noted above, Storms’ system meets this element even under Lancium’s construction. Second, Lancium is wrong as no claim requires mining occur “regardless of profitability,” as even Lancium acknowledges. D.I. 149 at 22 (“the claim elements ... have no requirements relating to profitability”). Lastly, as noted above, the ’433 Patent contemplates having a “minimum power threshold” of zero for an interval or even the full duration of a power option agreement, so whether Storms’ system stopped all mining is not dispositive of whether it evidenced Storms’ conception or would have communicated that subject matter to a POSA. D.I. 151 Ex. 17, ’433 Patent at 54:13-21.

For at least these reasons, there are genuine issues of fact that preclude summary judgment

regarding Storms' possession of the claimed invention. SSF ¶ 3, 4.

3. Storms communicated the subject matter claimed by the terms “power option agreement” and “minimum power threshold” even if he did not use those words when communicating with Defendants

As discussed above, some of the same evidence that establishes possession of the invention by Storms—the Product details and .CSV file—was also communicated directly to Lancium. Thus, the same issues of fact that preclude summary judgment on the issue of possession also preclude summary judgment as to whether Storms communicated those inventions to Lancium. SSF ¶ 5.

In addition, Storms verbally told Mr. McNamara that, in such situations, the selling of power could be performed by a variety of market entities:

- A: . . . And then utilizing, you know, different configurations and kind of some of the break-even calculations around the machines within your build determine when it's most profitable to effectively mine Bitcoin at that location or utilize the power and sell it back to the grid but in both the day-ahead and real-time markets.
- Q. In the context you're talking about, **who sells the power back to the grid?**
- A. **Variety of different options there. It could be the generator sells the power back. It could be the mining facility sells the power back. It could be a different market participant depending on the ISO.**
- Q. And what we've just been discussing, is that part of what you maintain you talked to Mr. McNamara about regarding how load can be controlled to maximize profitability?
- A. Yes.

Ex. E, Storms Dep. at 104:22-105:15 (emphasis added). Conversely, McNamara's memory of this conversation is “vague.” Ex. F, McNamara Dep. at 133-135.

As explained above, in such a scenario, Storms system literally meets each aspect of Lancium's proposed construction. SSF ¶ 3, 4, 5. Storms additional testimony, as supported by the documentary evidence discussed above, raises an additional question of fact to be resolved by the jury. *Nexus*, 2020 WL 6940505 at *13.

also found that the original conversion claim, “by its wording, is dependent on a determination of patent inventorship,” and on that basis alone found preemption. D.I. 92 at 5.⁷ The Court recognized that a BearBox amendment could fix the issue. D.I. 92 at 12 (“it is not clear that allowing the opportunity to amend would be a futile act”). Notably, whether or not the converted property was confidential was not part of the Court’s analysis, nor should it have been. *Dileo v. Horn*, 15-684 (La. App. 5 Cir. 3/16/16), 189 So. 3d 1189, 1198 (“Conversion is committed when one wrongfully does any act of dominion over the property of another in denial of or inconsistent with the owner's rights.”). The Court’s decision also clarified that “conversion claims that are based on *non*-patent-ownership theory of conversion are generally not preempted by federal patent law.” D.I. 92 at 5, n.5 (emphasis added).

In its SAC, then, BearBox explained that its conversion claim is based on the theft of material that is *not* included in the ’433 Patent, and therefore does *not* seek “patent-like” relief, or turn on questions of patent inventorship or ownership, which the Court properly concluded would not be preempted by patent law. *See, e.g.*, D.I. 103 ¶ 46 (“Not all aspects of BearBox’s technology that was stolen and used by Defendants was described and claimed in the ’433 Patent.”). As a result, when Lancium filed yet another motion to dismiss, this time directed to the SAC, including BearBox’s conversion claim, it did not ask the court to consider preemption again. D.I. 121.

Lancium’s argument that Louisiana conversion can only be premised on the theft of documents describing confidential information is wrong. If the “ideas and materials allegedly provided to [the defendant] are not found in [a] patent ... nothing in federal patent law now stands in the way of [the plaintiff] pursuing his state law claims.” *Wawrzynski v. H.J. Heinz Co.*, 728 F.3d

⁷ Plaintiffs did not object to the Report and Recommendation, and Your Honor adopted it on February 2, 2022. Plaintiffs subsequently filed their Second Amended Complaint on February 16, 2022.

14. Admitted for purposes of this motion.

15. Admitted for purposes of this motion.

16. **Disputed.** Defendants state as an undisputed fact that “none of the attachments to [Storms’ May 9, 2019 email] include any confidentiality marking or designation.” The “CONFIDENTIALITY NOTICE” at the bottom of that email, however, states that the email may contain “private, confidential, or legally privileged information,” which necessarily includes attachments contained in the email. The “CONFIDENTIALITY NOTICE” also directs any unintended recipients of the email to “permanently delete all copies of this email including all attachments,” further evidencing the understanding that the CONFIDENTIALITY NOTICE applies not only to the email, but to attachments in the email. Ex. L (LANCIUM00014645).

17. Admitted for purposes of this motion.

18. **Disputed.** While Plaintiffs do not assert that certain attachments to the May 9, 2019 email, alone, are confidential, the May 9, 2019 email (BB00000090) in its entirety, and by virtue of its attachment (BB00000097), is confidential. Storms Tr. at 217:20-23 (“Q: So what, if anything, in this e-mail then do you consider confidential. A: The confidential information in this email would be the attached Excel spreadsheet.”). Ex. B.

19. Admitted for purposes of this motion.

20. Admitted for purposes of this motion.

21. **Disputed as incomplete.** Although BearBox built and sold one container to Great American Mining, that container did not include the systems and methods at issue in this case. Storms Tr. 46:2-9. In addition to Mr. Storms’ testimony, the nature of the BearBox container sold to Great American Mining was explained to Defendants in written discovery responses at least as early as November 22, 2021:

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<p style="text-align: right;">Page 82</p> <p>1 A. Kind of all -- all of the above. You know, 2 I -- I developed a "product" with the BearBox containers 3 and felt confident at the time that I could develop 4 software solutions for a variety of different types of 5 deployments. 6 Q. What about as a miner, what were you doing 7 there as a miner? 8 A. I was -- I was trying to -- to learn more 9 about a few different things, specifically some of 10 Steve's flare gas initiatives, some of the microbtu 11 specifications and kind of looking at and feeling the 12 unit as opposed to just looking at pictures on line, 13 understanding kind of some of the speakers who were I 14 guess announced prior to and what they were talking about 15 and learning more about the industry and what other 16 people were doing. 17 Q. So is this -- the people attending this, are 18 there -- competitors in the mining industry. There's 19 finance, money people. There's -- is that fair? 20 A. Yeah, I wouldn't really categorize people as 21 like competitors in the mining industry. The industry's 22 still -- at the time was so young but that -- I guess 23 that's a fair -- fair consideration. 24 Q. Yeah, because I mean if two entities are</p>	<p style="text-align: right;">Page 84</p> <p>1 it easier to manage mining facilities? 2 A. It's -- it's -- as an object-oriented 3 programming language, it's decently easy to learn, and 4 there's a ton of API integrations that are easy to 5 implement from the perspective of Python as opposed to 6 other languages. 7 Q. Anything else? 8 A. It's -- it's my favorite language, so I guess 9 that's kind of my bias towards it, yeah. 10 Q. So you said you talked to Mr. McNamara at the 11 dinner. What did you talk to him about? Not at the 12 dinner, at the happy hour. What did you talk to him 13 about? 14 A. Talked to him about the BearBox container 15 builds and this idea about, you know, utilizing excess 16 wind and renewable energy in Texas. 17 Q. Did you talk to him about anything else? 18 A. Not to my recollection. 19 Q. Did you talk to him at a high level or 20 specifics level? 21 A. High level. 22 Q. Did you understand what you told Mr. McNamara 23 at that time to be confidential? 24 A. I don't think I communicated anything to him</p>
<p style="text-align: right;">Page 83</p> <p>1 mining, the way I understand it, you're all trying to 2 solve the next equation and whoever gets it first gets 3 the Bitcoin; isn't that right? 4 A. That's -- that's a high level understanding 5 of how it works, yes. 6 Q. That's an overly simplistic but correct 7 description; is that fair? 8 A. Yes. 9 Q. So who -- Quinn Lawler was a Bitcoin miner? 10 A. He -- he was at the time. 11 Q. Okay. And what did you and Mr. Lawler talk 12 about? We started on that before and went in a different 13 direction. 14 A. Yeah. We talked about a GPU farm that he -- 15 he was managing in Upstate New York and kind of his 16 experience that led him to managing that farm. 17 Q. What did -- what did you say to him? 18 A. I told him he should learn Python, you know, 19 because he was a former Wall Street like hedge fund guy 20 but didn't really have the experience to manage a large 21 scale GPU mining facility, and using Python he could -- 22 he could manage it a little bit -- a little bit better 23 than physically doing things. 24 Q. So what -- what is it about Python that makes</p>	<p style="text-align: right;">Page 85</p> <p>1 at the time that I would have considered to be 2 confidential. 3 Q. What did you talk to Mr. Peltan about? 4 A. I talked to Jesse about their Huddle Ranch 5 project and I guess how they were looking at the 6 development of that -- that substation and then about his 7 presentation that he gave at the summit. 8 Q. Did you talk to him about anything else? 9 A. I talked to him about building custom power 10 distribution units. 11 Q. About BearBox doing it or you doing it on 12 behalf of BearBox? 13 A. Yeah, designing and building custom power 14 distribution units because the industry wasn't -- there 15 wasn't anything off the shelf at the time for some of the 16 specifications. 17 Q. Did you go into any specifics? 18 A. Went into specifics around the -- how the 19 branch circuits were designed and why I started building 20 them in the first place. 21 Q. Did Mr. Peltan understand what you were 22 telling him was confidential? 23 A. At the time I -- I wasn't -- I didn't 24 communicate anything to Jesse that was confidential to</p>

22 (Pages 82 - 85)

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<p style="text-align: right;">Page 94</p> <p>1 Q. So if I understand your position, you --</p> <p>2 well, let's -- so who did you talk to at the dinner?</p> <p>3 A. I talked with Michael McNamara and his CFO.</p> <p>4 Q. Did you talk to anybody else?</p> <p>5 A. Maybe like very briefly.</p> <p>6 Q. Did you talk to Mr. Lawler who was on your</p> <p>7 other side?</p> <p>8 A. I probably did at some point.</p> <p>9 Q. Did you talk to anybody else?</p> <p>10 A. I probably talked with -- with Jamie and Rich</p> <p>11 at some point as well.</p> <p>12 Q. Anybody else?</p> <p>13 A. No. The table was so long. I couldn't --</p> <p>14 you can't really see or talk past that.</p> <p>15 Q. So sort of the people on your end of the</p> <p>16 table you talked with?</p> <p>17 A. Yeah.</p> <p>18 Q. And across from you?</p> <p>19 A. Yeah.</p> <p>20 Q. How long was the dinner?</p> <p>21 A. Probably an hour to two hours.</p> <p>22 Q. So what did you talk to Mr. Godwin about?</p> <p>23 A. At the dinner?</p> <p>24 Q. Yeah.</p>	<p style="text-align: right;">Page 96</p> <p>1 Q. Did you tell Mr. McNamara that?</p> <p>2 A. Yes.</p> <p>3 Q. What -- tell me everything you remember</p> <p>4 talking to either Mr. McNamara or his CFO.</p> <p>5 A. Yeah, so I talked with them about like their</p> <p>6 current physical infrastructure and what they were</p> <p>7 looking at from an electrical standpoint. I talked with</p> <p>8 them about their -- their electrical engineer they said</p> <p>9 on staff who didn't like the Digital Shovel electrical</p> <p>10 distribution and why I thought it was a bad idea as well.</p> <p>11 I talked to them about physical characteristics of my</p> <p>12 BearBox units and why I thought that they were different</p> <p>13 than other offerings in the market, and I talked with</p> <p>14 them about the -- some of the software that I was working</p> <p>15 on to offer flexibility for those units and the -- their</p> <p>16 load and how they, you know, could be controlled and how</p> <p>17 you could really maximize the profitability depending on</p> <p>18 the setup.</p> <p>19 Q. Anything else?</p> <p>20 A. There's -- there's a lot that goes into that</p> <p>21 and some of the ideas around kind of how -- how the</p> <p>22 development took place from the -- from the physical side</p> <p>23 of the power distribution units to me writing the</p> <p>24 software and understanding how electricity moves through</p>
<p style="text-align: right;">Page 95</p> <p>1 A. Nothing -- nothing in particular.</p> <p>2 Q. What about -- I'm trying to remember who else</p> <p>3 you said you spoke with. What did you talk with them</p> <p>4 about outside of the Lancium folks?</p> <p>5 A. Again -- again, nothing in particular.</p> <p>6 There's general small talk, if you will. I think Quinn</p> <p>7 and I probably continued some of the conversation around</p> <p>8 what I was telling him he needed to learn for the GPU</p> <p>9 farm, but the vast majority of the conversation that took</p> <p>10 place at the dinner was between me and Michael McNamara</p> <p>11 and his CFO.</p> <p>12 Q. And what did you talk to Mr. McNamara and his</p> <p>13 CFO about?</p> <p>14 A. What I was working on at BearBox, what I</p> <p>15 developed and kind of my vision on how you could build</p> <p>16 out something like this to -- to really utilize renewable</p> <p>17 energy.</p> <p>18 Q. When you say "something like this," what do</p> <p>19 you mean?</p> <p>20 A. Something like the -- the BearBox containers.</p> <p>21 They're -- you know, building containers is great, but</p> <p>22 you could utilize the same -- the same type of software</p> <p>23 in a large like super structure build. It's not specific</p> <p>24 to the housing in which the machines run.</p>	<p style="text-align: right;">Page 97</p> <p>1 the market.</p> <p>2 Q. Anything else?</p> <p>3 A. I wouldn't say anything else outside of like</p> <p>4 some like specifications around -- around those things.</p> <p>5 Q. Did you show Mr. McNamara or his CEO or CFO I</p> <p>6 should say any documents or, you know, pictures on your</p> <p>7 phone or anything like that during -- during the dinner?</p> <p>8 A. I think I may have showed them like an</p> <p>9 outdoor picture of the BearBox container but outside of</p> <p>10 that, no.</p> <p>11 Q. So you said -- what did -- so what did</p> <p>12 Mr. McNamara talk to you about?</p> <p>13 A. So at a high level, he just talked about that</p> <p>14 they were looking for ways to utilize excess wind energy</p> <p>15 for some of their -- at the time it was their data</p> <p>16 center-type builds around high throughput computing like</p> <p>17 machine learning algorithms and neural networks and how</p> <p>18 he thought that the power costs for the wind energy would</p> <p>19 make hosting those type of data center arrangements</p> <p>20 profitable.</p> <p>21 Q. Did you talk to him about Bitcoin mining at</p> <p>22 all?</p> <p>23 A. I did, yeah.</p> <p>24 Q. So we started this with current physically --</p>

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<p style="text-align: right;">Page 98</p> <p>1 current physical installation and that's -- Mr. McNamara 2 talked to you about that, his current installation? 3 A. They talked about some of the designs that 4 they were looking at and so did his CFO and how they had 5 some I guess issues with the safety of certain voltages 6 in the electrical distribution system that some of the 7 manufacturers were -- were deciding to use, and I 8 explained to them how -- how mine were different. 9 Outside of that nothing really in particular about 10 their -- their I guess physical characteristics or their, 11 you know, mining efforts, if you will. 12 Q. So you also said he talked to you about 13 Digital Shovel. What is Digital Shovel? 14 A. Digital Shovel is a company owned by a guy 15 named -- I can't remember his name. They -- they -- they 16 manufacture Bitcoin mining containers, and I think at the 17 time they were doing GPU mining containers as well, but 18 they weren't -- they weren't like shipping containers 19 that were modified. They were built from scratch, and I 20 had some hesitations about the units. 21 Q. And so your BearBox unit that you have at 22 this time -- 23 A. Um-hum. 24 Q. -- that's basically a modified shipping</p>	<p style="text-align: right;">Page 100</p> <p>1 him about software. What did you talk to him about 2 software? 3 A. Yeah, so I talked to him about how I thought 4 that my software would be able to utilize certain -- 5 certain variables to achieve what I considered to be like 6 fine grain load control over -- over the mining machines 7 within the build depending on a bunch of different 8 things. 9 Q. And what -- what did you understand fine 10 grain load control -- what did you mean by fine grain 11 load control? 12 A. So fine grain load control at least from my 13 understanding at the time was the ability to turn on or 14 off machines within a build, mining machines within a 15 build. Rather than turn it all on or all off you have 16 some flexibility within there. 17 Q. Anything else? 18 A. No, that's pretty much -- that's what fine 19 grain load control means. 20 Q. So did you talk about anything else about the 21 software? 22 A. Yeah, so we talked about how I was building 23 out different integrations for -- for power entities and 24 how you could utilize those integrations and things like</p>
<p style="text-align: right;">Page 99</p> <p>1 container -- 2 A. Yes. 3 Q. -- to ship, you know, stuff on large ships 4 that go back and forth between the U.S. and other 5 countries? 6 A. Yes. 7 Q. So you get those containers and then build 8 them out? 9 A. Yes. 10 Q. So did Mr. McNamara talk to you about 11 anything else? 12 A. Not that I can recall, no. 13 Q. You said you talked to him about physical 14 characteristics of the BearBox. What did you talk to him 15 about that? 16 A. Things like air flow, how -- how I designed 17 the intakes and exhaust, how I designed the electrical 18 service and distribution, some of the benefits to doing 19 that, like I said earlier, like the power distribution 20 units, right, and how they were modular so you wouldn't 21 have to change out everything when new mining machines 22 came out. Yeah, that's pretty much all the physical 23 characteristics. 24 Q. You said you talked about -- you talked to</p>	<p style="text-align: right;">Page 101</p> <p>1 power pricing to determine like what -- what your 2 strategy was for how many machines you wanted on, how 3 many machines you wanted mining, the break-even costs and 4 opportunity costs of those machines and how to calculate 5 that. 6 MR. NELSON: Can I get you to read his answer 7 back? 8 (Requested portion of the 9 record read.) 10 BY MR. NELSON: 11 Q. So you said you were building out different 12 integrations for power entities. Which power entities 13 were you building out integrations for at that time? 14 A. A couple of different types. As a -- as a 15 power generator like of the wind facility or solar 16 facility and being able to understand kind of what their 17 pricing mechanisms were or other variable constraints, 18 some marketplace data from independent system operators 19 like ERCOT or MISO or the Selvis (phonetic) Power Pool 20 and how to -- how to actually take down that information 21 in a way that was usable for the mining facility. 22 Q. So this isn't -- you haven't been hired by 23 power entities to do this. This is just you're talking 24 about sort of what you were working on when you were</p>

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<p style="text-align: right;">Page 102</p> <p>1 doing software modeling, is that what -- is that -- I</p> <p>2 guess I'm confused. Were you actually hired by power</p> <p>3 entities to do this?</p> <p>4 A. No, I wasn't -- I wasn't hired by any power</p> <p>5 entities at the time.</p> <p>6 Q. Okay.</p> <p>7 A. Yeah.</p> <p>8 Q. So when you say "integration for power</p> <p>9 entities," you're talking sort of generic wind farm,</p> <p>10 solar, that sort of stuff?</p> <p>11 A. Yeah, really like generic -- I guess generic</p> <p>12 integrations for the data that you would need in order to</p> <p>13 maximize the -- the economic potential of that energy as</p> <p>14 it relates to, you know, mining Bitcoin or not mining</p> <p>15 Bitcoin and where the energy goes and how it's priced.</p> <p>16 Q. And where -- where did you obtain the</p> <p>17 information that you maintain you were discussing with</p> <p>18 him?</p> <p>19 A. I'm sorry. Can you clarify?</p> <p>20 Q. Yeah, I'll try. That's probably a bad</p> <p>21 question.</p> <p>22 A. Yeah.</p> <p>23 Q. So, you know, you're talking about</p> <p>24 discussions that you under -- that you remember happened</p>	<p style="text-align: right;">Page 104</p> <p>1 Q. What do you maintain that you discussed with</p> <p>2 Mr. McNamara and/or his CFO that wasn't part of what you</p> <p>3 just described as part of the GlidePath project?</p> <p>4 A. Sure. So different -- different</p> <p>5 configurations and setups for that. You don't -- you</p> <p>6 don't necessarily have to be like a behind the meter load</p> <p>7 in order to utilize a strategy like that to determine</p> <p>8 wind power pricing makes sense when it doesn't or other,</p> <p>9 you know, other grid directives that might come through.</p> <p>10 Q. So did you -- did you talk about any</p> <p>11 specifics? Had you already modeled that stuff at that</p> <p>12 point?</p> <p>13 A. I modeled some of it. I modeled all of the</p> <p>14 settlement locations at that point, yeah.</p> <p>15 Q. When you say "modeled all of the settlement</p> <p>16 locations," what do you mean?</p> <p>17 A. So you can essentially take down the power</p> <p>18 price at each settlement location within a grid.</p> <p>19 Q. That's publicly available; right?</p> <p>20 A. Publicly available data.</p> <p>21 Q. Yeah.</p> <p>22 A. Yep. And then utilizing, you know, different</p> <p>23 configurations and kind of some of the break-even</p> <p>24 calculations around the machines within your build</p>
<p style="text-align: right;">Page 103</p> <p>1 with Mr. McNamara and his CFO.</p> <p>2 A. Um-hum.</p> <p>3 Q. And what I'm trying to find out is so the</p> <p>4 information that you're talking about here, what is that</p> <p>5 based on.</p> <p>6 A. That information's based on software that I</p> <p>7 wrote and databases that I created and modeling</p> <p>8 information that I created.</p> <p>9 Q. And is that in connection with working with</p> <p>10 Ben Hakes and the GlidePath project and the Exelon stuff?</p> <p>11 A. Part of it was but part of it wasn't. You</p> <p>12 know, reasonably I think there -- there was a lot of data</p> <p>13 that I was modeling at the time for a ton of different</p> <p>14 locations and different setups.</p> <p>15 Q. So what part of it was based on the code that</p> <p>16 you had written in connection with Mr. Hakes and</p> <p>17 GlidePath?</p> <p>18 A. I guess like one of -- one of the setups or</p> <p>19 different configurations where you could utilize a mining</p> <p>20 container in a behind the meter setup that looked at both</p> <p>21 the day-ahead and real-time pricing for that settlement</p> <p>22 location on the grid and then determine what the strategy</p> <p>23 was to take down the wind power to mine or to use it to</p> <p>24 sell back to the grid.</p>	<p style="text-align: right;">Page 105</p> <p>1 determine when it's most profitable to effectively mine</p> <p>2 Bitcoin at that location or utilize the power and sell it</p> <p>3 back to the grid but in both the day-ahead and real-time</p> <p>4 markets.</p> <p>5 Q. In the context you're talking about, who</p> <p>6 sells the power back to the grid?</p> <p>7 A. Variety of different options there. It could</p> <p>8 be the generator sells the power back. It could be the</p> <p>9 mining facility sells the power back. It could be a</p> <p>10 different market participant depending on the ISO.</p> <p>11 Q. And what we've just been discussing, is that</p> <p>12 part of what you maintain you talked to Mr. McNamara</p> <p>13 about regarding how load can be controlled to maximize</p> <p>14 profitability?</p> <p>15 A. Yes.</p> <p>16 Q. So anything else other than what we just --</p> <p>17 so how -- in your memory, how specific were you with your</p> <p>18 discussions with Mr. McNamara and his CFO?</p> <p>19 A. Extremely specific.</p> <p>20 Q. What do you mean by that?</p> <p>21 A. I -- I shared with them how to design</p> <p>22 database tables for a miner management system that could</p> <p>23 effectively pull in individual data from individual</p> <p>24 miners that were mapped to PDUs and relays within the</p>

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<p style="text-align: right;">Page 106</p> <p>1 build to determine what the break-even cost is there, and 2 then the power distribution unit and control system could 3 at the same time toggle relays on or off or send a 4 command to the miner to, you know, power on or power off 5 or stop mining or change the mode which it's operating 6 depending upon the power and price and things of that 7 nature. 8 Q. And you did -- you did all of this over 9 dinner? 10 A. Yeah. Almost like huddled up at the end of 11 the table, yeah. 12 Q. Did anybody else hear these conversations? 13 A. Not to my knowledge, no. 14 Q. Did Mr. McNamara or his CFO, to your 15 knowledge, have an understanding of what they told you 16 was confidential? 17 A. They didn't really share anything with me 18 that I would -- I would think that they believed would be 19 confidential. 20 Q. So you don't know one way or the other? 21 A. Yeah, I don't know what they consider to be 22 confidential. 23 Q. And from my understanding of this case, you 24 believe that what you shared with them was confidential;</p>	<p style="text-align: right;">Page 108</p> <p>1 you know, maintain the maximum economic outcome from 2 renewable energy. 3 Q. Were they -- were they talking to other 4 people? 5 A. No. 6 Q. They were just talking to you the whole time? 7 A. Yeah. Maybe like, again, maybe some passing 8 conversations like I had with, you know, Quinn or Rich or 9 Jamie but nothing -- nothing in depth. 10 Q. Do you remember how -- how many glasses of 11 wine, if any, they had during the dinner? 12 A. No, I don't. 13 Q. Did you have more than one glass of wine 14 during the dinner? 15 A. I might have had two, but that's -- that's 16 typically my rule. 17 Q. Was this -- what was the general atmosphere 18 like? Was it everybody was kind of celebrating, you go 19 out to a conference, you're meeting each other, having 20 some drinks, having a good steak? 21 A. Yeah, I'd say that's a decent description of 22 it. 23 Q. What -- if I understand you correctly, you 24 picked up the check?</p>
<p style="text-align: right;">Page 107</p> <p>1 is that right? 2 A. Yes. 3 Q. Did you tell them that? 4 A. I think it's -- it's understood in that 5 conversation and the -- the -- I guess how it takes 6 place. I don't remember if I specifically told them to 7 not tell anybody about this or -- or to keep it 8 confidential and between us. 9 Q. Well, I understand that you may feel it -- 10 you may feel it's understood. Do you have any 11 recollection of telling Mr. McNamara or his CFO that it 12 was confidential? 13 A. I imagine that I did because of the detail in 14 which I went in, but I can't say either yes or no that I 15 remember me saying don't tell anyone about this and this 16 is confidential information. 17 Q. So what happened next at the dinner? 18 A. That was pretty much the conclusion of the 19 dinner. I mean for the majority of the dinner I -- I 20 talked and McNamara and his CFO just kind of listened. 21 Again, like you said, maybe I was in sales mode at the 22 time, but that was -- the majority of the dinner was me 23 going into specifications around how this worked not in 24 theory but in practice and how it could be utilized to,</p>	<p style="text-align: right;">Page 109</p> <p>1 A. A portion of the check, yeah. 2 Q. Okay. Why did -- why did you choose to pick 3 up a portion of the check? 4 A. It's something that I've kind of always done. 5 Q. Who picked up -- who else picked up the 6 check? 7 A. I'm not sure who picked up the check for like 8 the rest of the table. I remember -- I remember I picked 9 up the check for like kind of our section, but I don't 10 know who picked up the check for other chunks of the 11 table. 12 Q. By your section, you mean who? 13 A. I think I picked up the check for me, 14 McNamara's CFO, McNamara, and then I remember P.J. 15 McAvity telling me thank you for paying for dinner. 16 Q. So what happened after dinner? 17 A. After dinner some -- some people went out to 18 a bar. Some people went back to their hotels. I went 19 out to a bar with Jesse Peltan, this Australian guy who I 20 can't remember his name but he was kind of crazy. And 21 who else was there? I think -- I think that was it. 22 Q. And what did you and Mr. Peltan talk about at 23 the -- afterwards at the bar? 24 A. Well, we had talked about different</p>

From: Stover, Chad <Chad.Stover@btlaw.com>
Sent: Wednesday, June 23, 2021 3:09 PM
To: Benjamin T. Horton; John R. Labbe
Cc: Nelson, Mark; Chelsea M. Murray; Mayo, Andrew C.; Ray Ricordati
Subject: RE: BearBox and Storms v. Lancium - Rule 26(f) discovery conference
Attachments: Bearbox v. Lancium - Draft Scheduling Order 6-22-21-c-c.docx; Judge Noreika letter.docx

External - This email is from an external email address outside the firm.

Ben,

Thanks for providing this and making these changes. In the attached version, I made a few minor changes that I hope won't be controversial. Here's a summary:

- Pushed the trial date back about a month because of a conflict on our end with August 2022. I also pushed back the dispositive motion deadline and pretrial conference a bit given that there was more time in schedule after moving the trial date.
- I changed the rebuttal expert report deadline from Feb. 18 to Feb 22, 2022
- I changed the RFAs to 50 and excluded RFA related solely to authenticity from this limit.
- I added a note about deposition locations. We expect we can agree to take depositions near where the witnesses live/work.

On the cover letter, please see the attached draft. We reserve the right to modify our portion in response to the arguments you add. I'm happy to put this on my letterhead after receiving your portion.

Thanks,
Chad

Chad S.C. Stover | Partner
Direct: (302) 300-3474 | Mobile: (302) 766-2932
Wilmington, DE



From: Benjamin T. Horton <bhorton@marshallip.com>
Sent: Tuesday, June 22, 2021 5:36 PM
To: Stover, Chad <Chad.Stover@btlaw.com>; John R. Labbe <jlabbe@marshallip.com>
Cc: Nelson, Mark <mnelson@btlaw.com>; Chelsea M. Murray <cmurray@marshallip.com>; Mayo, Andrew C. <AMayo@ashbygeddes.com>; Ray Ricordati <rricordati@marshallip.com>
Subject: [EXTERNAL]RE: BearBox and Storms v. Lancium - Rule 26(f) discovery conference

Hi Chad,

I attach a revised proposed schedule, consistent with our call this morning. For clarity, we accepted all previous edits, and new changes are now in redline. As you requested, we moved up the trial date by two months to August 2022. We reconfigured a few of the intermediate deadlines, but maintained the spacing that we all agree is appropriate. As you suggested, we removed the claim construction dates, leaving only the August 27, 2021 deadline, a promise to inform the

Court of the parties' decision and, if Markman is necessary, that the parties will propose a claim construction schedule for the Court's consideration.

We left the RFA limit at 25, but we will agree that the limit does not apply to authentication RFAs. If that doesn't address your request to increase the limit to 50 RFAs, let me know and we can work something out.

This should address all issues with this proposal. We look forward to your confirmation that Defendants will raise bifurcation with Judge Noreika by cover letter and, if so, that we will receive your portion of that letter the first half of tomorrow.

Best regards,
Ben

From: Stover, Chad <Chad.Stover@btlaw.com>
Sent: Monday, June 21, 2021 5:02 PM
To: John R. Labbe <jlabbe@marshallip.com>; Benjamin T. Horton <bhorton@marshallip.com>
Cc: Nelson, Mark <mnelson@btlaw.com>; Chelsea M. Murray <cmurray@marshallip.com>; Mayo, Andrew C. <AMayo@ashbygeddes.com>; Ray Ricordati <rricordati@marshallip.com>
Subject: RE: BearBox and Storms v. Lancium - Rule 26(f) discovery conference

External - This email is from an external email address outside the firm.

John,

Today got away from me. Noon ET tomorrow works. I'll look forward to speaking with you then.

Thanks,
Chad

Chad S.C. Stover | Partner
Direct: (302) 300-3474 | Mobile: (302) 766-2932
Wilmington, DE



From: John R. Labbe <jlabbe@marshallip.com>
Sent: Monday, June 21, 2021 3:04 PM
To: Stover, Chad <Chad.Stover@btlaw.com>; Benjamin T. Horton <bhorton@marshallip.com>
Cc: Nelson, Mark <mnelson@btlaw.com>; Chelsea M. Murray <cmurray@marshallip.com>; Mayo, Andrew C. <AMayo@ashbygeddes.com>; Ray Ricordati <rricordati@marshallip.com>
Subject: [EXTERNAL]Re: BearBox and Storms v. Lancium - Rule 26(f) discovery conference

Chad,

Ben isn't available this afternoon, but I could talk at either 4:30 or 5:00 ET. We're also available at noon ET tomorrow and other times tomorrow, as well, if necessary.

Please let us know when you would prefer to talk.

John

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

V.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E.
CLINE, JR.,

Defendants.

C.A. No. 21-534-MN

SCHEDULING ORDER [NON-PATENT; JURY TRIAL]

This day of _____, the Court having conducted an initial Rule 16(b) scheduling conference pursuant to Local Rule 16.1(b), and the parties having determined after discussion that the matter cannot be resolved at this juncture by settlement, voluntary mediation, or binding arbitration;

IT IS ORDERED that:

1. Rule 26(a)(1) Initial Disclosures and E-Discovery Default Standard.

Unless otherwise agreed to by the parties, the parties shall make their initial disclosures pursuant to Federal Rule of Civil Procedure 26(a)(1) within five (5) days of the date the Court entered this Order. If they have not already done so, the parties are to review the Court’s Default Standard for Discovery, Including Discovery of Electronically Stored Information (“ESI”), which is posted at <http://www.ded.uscourts.gov> (*see* Other Resources, Default Standard for Discovery) and is incorporated herein by reference.

2. Joinder of Other Parties and Amendment of Pleadings. All motions to join other parties, and to amend or supplement the pleadings, shall be filed on or before **November 1, 2021**.

Unless otherwise ordered by the Court, any motion to join a party or motion to amend the pleadings shall be made pursuant to the procedures set forth in Paragraphs 7(g) and 8.

3. Application to Court for Protective Order. Should counsel find it will be necessary to apply to the Court for a protective order specifying terms and conditions for the disclosure of confidential information, counsel should confer and attempt to reach an agreement on a proposed form of order and submit it to the Court within ten (10) days from the date the Court enters this Order. Should counsel be unable to reach an agreement on a proposed form of order, counsel must follow the provisions of Paragraph 7(g) below.

Any proposed protective order must include the following paragraph:

Other Proceedings. By entering this order and limiting the disclosure of information in this case, the Court does not intend to preclude another court from finding that information may be relevant and subject to disclosure in another case. Any person or party subject to this order who becomes subject to a motion to disclose another party's information designated "confidential" [the parties should list any other level of designation, such as "highly confidential," which may be provided for in the protective order] pursuant to this order shall promptly notify that party of the motion so that the party may have an opportunity to appear and be heard on whether that information should be disclosed.

4. Papers Filed Under Seal. In accordance with section G of the Revised Administrative Procedures Governing Filing and Service by Electronic Means, a redacted version of any sealed document shall be filed electronically within seven (7) days of the filing of the sealed document.

5. Courtesy Copies. The parties shall provide to the Court two (2) courtesy copies of all briefs and any other document filed in support of any briefs (*i.e.*, appendices, exhibits, declarations, affidavits etc.). This provision also applies to papers filed under seal. All courtesy copies shall be double-sided.

6. ADR Process. This matter is referred to a magistrate judge to explore the possibility of alternative dispute resolution.

7. Discovery. Unless otherwise ordered by the Court or agreed to by parties, the limitations on discovery set forth in the Federal Rules shall be strictly observed.

(a) Fact Discovery Cut Off. All fact discovery in this case shall be initiated so that it will be completed on or before December 14, 2021.

(b) Document Production. Document production shall be substantially complete by October 8, 2021.

(c) Requests for Admission. A maximum of fifty (50) requests for admission are permitted for each side. For clarity, this limit does not apply to requests for admission related solely to authenticity.

(d) Interrogatories.

i. A maximum of twenty-five (25) interrogatories, including contention interrogatories, are permitted for each side.

ii. The Court encourages the parties to serve and respond to contention interrogatories early in the case. In the absence of agreement among the parties, contention interrogatories, if filed, shall first be addressed by the party with the burden of proof. The adequacy of all interrogatory answers shall be judged by the level of detail each party provides (*i.e.*, the more detail a party provides, the more detail a party shall receive).

(e) Depositions.

i. Limitation on Hours for Deposition Discovery. Each side is limited to a total of thirty (30) hours of taking testimony by deposition upon oral examination.

ii. Location of Depositions. Any party or representative (officer, director, or managing agent) of a party filing a civil action in this district court must ordinarily be required, upon request, to submit to a deposition at a place designated within this district. Exceptions to this general rule may be made by order of the Court. A defendant who becomes a counterclaimant, cross-claimant, or third-party plaintiff shall be considered as having filed an action in this Court for the purpose of this provision.

(f) Disclosure of Expert Testimony.

i. Expert Reports. For the party who has the initial burden of proof on the subject matter, the initial Federal Rule of Civil Procedure 26(a)(2) disclosure of expert testimony is due on or before January 18, 2022. The supplemental disclosure to contradict or rebut evidence on the same matter identified by another party is due on or before February 18, 2022. Reply expert reports from the party with the initial burden of proof are due on or before March 8, 2022. No other expert reports will be permitted without either the consent of all parties or leave of the Court. Along with the submissions of the expert reports, the parties shall advise of the dates and times of their experts' availability for deposition.

ii. Objections to Expert Testimony. To the extent any objection to expert testimony is made pursuant to the principles announced in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), as incorporated in Federal Rule of Evidence 702, it shall be made by motion no later than the deadline for dispositive motions set forth herein, unless otherwise ordered by the Court.

iii. Expert Discovery Cut Off. All expert discovery in this case shall be initiated so that it will be completed on or before April 13, 2022.

(g) Discovery Matters and Disputes Relating to Protective Orders.

i. Any discovery motion filed without first complying with the following procedures will be denied without prejudice to renew pursuant to these procedures.

ii. Should counsel find, after a reasonable effort pursuant to Local Rule 7.1.1 that they are unable to resolve a discovery matter or a dispute relating to a protective order, the parties involved in the discovery matter or protective order dispute shall contact the Court's Judicial Administrator to schedule an argument.

iii. On a date to be set by separate order, generally not less than four (4) days prior to the conference, the party seeking relief shall file with the Court a letter, not to exceed three (3) pages, outlining the issues in dispute and its position on those issues. On a date to be set by separate order, but generally not less than three (3) days prior to the conference, any party opposing the application for relief may file a letter, not to exceed three (3) pages, outlining that party's reasons for its opposition.

iv. The parties shall provide to the Court two (2) courtesy copies of its discovery letter and any other document filed in support of any letter (*i.e.*, appendices, exhibits, declarations, affidavits etc.). This provision also applies to papers filed under seal. All courtesy copies shall be double-sided.

v. Should the Court find further briefing necessary upon conclusion of the conference, the Court will order it. Alternatively, the Court may choose to resolve the dispute prior to the conference and will, in that event, cancel the conference.

8. Claim Construction. The parties have determined that claim construction may be necessary in this case. By August 27, 2021, the parties shall determine whether or not claim construction is necessary and further notify the Court of their decision, and if claim construction is necessary, the parties will propose a claim construction schedule for the Court's consideration.

9. Motions to Amend / Motions to Strike.

(a) Any motion to amend (including a motion for leave to amend) a pleading or any motion to strike any pleading or other document shall be made pursuant to the discovery dispute procedure set forth in Paragraph 7(g) above.

(b) Any such motion shall attach the proposed amended pleading as well as a “redline” comparison to the prior pleading or attach the document to be stricken.

10. Case Dispositive Motions.

(a) All case dispositive motions, an opening brief, and affidavits, if any, in support of the motion shall be served and filed on or before June 13, 2022. Briefing will be presented pursuant to the Court’s Local Rules. No case dispositive motion under Rule 56 may be filed more than ten (10) days before the above date without leave of the Court.

(b) Concise Statement of Facts Requirement. Any motion for summary judgment shall be accompanied by a separate concise statement, not to exceed six (6) pages, which details each material fact which the moving party contends is essential for the Court’s resolution of the summary judgment motion (not the entire case) and as to which the moving party contends there is no genuine issue to be tried. Each fact shall be set forth in a separate numbered paragraph and shall be supported by specific citation(s) to the record.

Any party opposing the motion shall include with its opposing papers a response to the moving party’s concise statement, not to exceed six (6) pages, which admits or disputes the facts set forth in the moving party’s concise statement on a paragraph-by-paragraph basis. To the extent a fact is disputed, the basis of the dispute shall be supported by specific citation(s) to the record. Failure to respond to a fact presented in the moving party’s concise statement of facts shall indicate that fact is not in dispute for purposes of summary judgment. The party opposing the

motion may also include with its opposing papers a separate concise statement, not to exceed four (4) pages, which sets forth material facts as to which the opposing party contends there is a genuine issue to be tried. Each fact asserted by the opposing party shall also be set forth in a separate numbered paragraph and shall be supported by specific citation(s) to the record.

The moving party shall include with its reply papers a response to the opposing party's concise statement of facts, not to exceed four (4) pages, on a paragraph-by-paragraph basis. Failure to respond to a fact presented in the opposing party's concise statement of facts shall indicate that fact remains in dispute for purposes of summary judgment.

11. Applications by Motion. Except as otherwise specified herein, any application to the Court shall be by written motion. Any non-dispositive motion should contain the statement required by Local Rule 7.1.1.

12. Motions in Limine. Motions *in limine* shall not be separately filed. All *in limine* requests and responses thereto shall be set forth in the proposed pretrial order. Each party shall be limited to three (3) *in limine* requests, unless otherwise permitted by the Court. The *in limine* request and any response shall contain the authorities relied upon; each *in limine* request may be supported by a maximum of three (3) pages of argument, may be opposed by a maximum of three (3) pages of argument, and the party making the *in limine* request may add a maximum of one (1) additional page in reply in support of its request. If more than one party is supporting or opposing an *in limine* request, such support or opposition shall be combined in a single three (3) page submission (and, if the moving party, a single one (1) page reply), unless otherwise ordered by the Court. No separate briefing shall be submitted on *in limine* requests, unless otherwise permitted by the Court.

13. Pretrial Conference. On **September __, 2022**, the Court will hold a pretrial conference in Court with counsel beginning at 10:00 a.m. The parties shall file with the Court the joint proposed final pretrial order in compliance with Local Rule 16.3(c) and the Court's Preferences and Procedures for Civil Cases not later than seven (7) days before the pretrial conference. Unless otherwise ordered by the Court, the parties shall comply with the timeframes set forth in Local Rule 16.3(d)(1)-(3) for the preparation of the joint proposed final pretrial order. The Court will advise the parties at or before the above-scheduled pretrial conference whether an additional pretrial conference will be necessary.

The parties shall provide the Court two (2) double-sided courtesy copies of the joint proposed final pretrial order and all attachments. The proposed final pretrial order shall contain a table of contents and the paragraphs shall be numbered.

14. Jury Instructions, Voir Dire, and Special Verdict Forms. Where a case is to be tried to a jury, pursuant to Local Rules 47.1(a)(2) and 51.1 the parties should file (i) proposed voir dire, (ii) preliminary jury instructions, (iii) final jury instructions, and (iv) special verdict forms seven (7) full business days before the final pretrial conference. This submission shall be accompanied by a courtesy copy containing electronic files of these documents, in Microsoft Word format, which may be submitted by e-mail to mn_civil@ded.uscourts.gov.

15. Trial. This matter is scheduled for a four (4) day jury trial beginning at 9:30 a.m. on **September __, 2022**, with the subsequent trial days beginning at 9:00 a.m. Until the case is submitted to the jury for deliberations, the jury will be excused each day at 4:30 p.m. The trial will be timed, as counsel will be allocated a total number of hours in which to present their respective cases.

The Honorable Maryellen Noreika

United State District Judge

EXHIBIT A

EVENT	DEADLINE
Submission of Joint Scheduling Order	June 24, 2021
Rule 26(a)(1) Initial Disclosures	Within 5 days of the date of the Scheduling Order
Application to Court for Protective Order	Within 10 days of the date of the Scheduling Order
Determination of Whether Claim Construction is Necessary and Advise Court	August 27, 2021
Substantial Completion of Document Production	October 8, 2021
Fact Discovery Cut-Off	December 14, 2021
Initial Expert Reports	January 18, 2022
Rebuttal Expert Reports	February 22, 2022
Reply Expert Reports	March 8, 2022
Expert Discovery Cut-Off	April 13, 2022
Case Dispositive Motions	June 13, 2022
Pretrial Conference	September ___, 2022
Trial (4-day jury)	September ___, 2022

Judge Noreika,

I write on behalf of the parties in response to the Court's direction that the parties confer on a proposed scheduling order. The parties have fundamentally different positions because they disagree about what counts are properly in the case and whether a jury trial is needed on Plaintiffs' inventorship counts. Each side states its position below. The parties request a scheduling conference to further explain their positions and answer any questions the Court may have.

Lancium's Position

This case is a narrow inventorship dispute about whether Lancium's '433 patent was based on Lancium's own work or a single email and several texts sent to Lancium's CEO by Plaintiff Austin Storms, the contents of which are predated by Lancium's own work. (D.I. 23 at pp. 27-32.) In addition to Counts I and II for correction of inventorship, Plaintiffs also allege conversion, unjust enrichment, and negligent misrepresentation (Counts III-V). The allegations in Counts III-V show that inventorship is essential to the resolution of these counts. *See* D.I. 19 at ¶ 61 (conversion: alleging Lancium's dominion over the BearBox Technology by claiming it in the '433 patent; unjust enrichment: alleging Lancium unlawfully used property by asserting inventorship over the BearBox Technology; negligent misrepresentation: alleging Lancium recklessly incorporated the BearBox Technology into a patent application). Because inventorship is essential to the resolution of these claims, they are preempted and should be dismissed. *See, e.g., Speedfit LLC v. Woodway USA, Inc.*, 226 F. Supp. 3d 149, 160 (E.D.N.Y. 2016) (dismissing conversion count because it "turn[ed] on a determination of inventorship").

The pleadings closed yesterday when Plaintiffs filed their Answer to Counterclaims one day early. Lancium plans to file a Rule 12(c) motion for judgment on the pleadings to dismiss Plaintiffs' conversion, unjust enrichment, and negligent misrepresentation counts early next week. This motion will be based on preemption and other legal deficiencies in these claims. If granted, the only remaining counts will be for correction of inventorship, to which no right to a trial by jury attaches. *See, e.g., MCV, Inc. v. King-Seeley Thermos Co.*, 870 F.2d 1568, 1570 (Fed. Cir. 1989) ("section 256 [] explicitly authorizes judicial resolution of co-inventorship contests over issued patents"). While the Federal Circuit has held that commonality between an inventorship claim and a fraud claim required a trial by jury, *Shum v. Intel Corp.*, 499 F.3d 1272, 1279 (Fed. Cir. 2007), this is a different case without a fraud claim. And, in any event, Plaintiffs' other claims should be dismissed as preempted.¹

Recognizing that it will take time to brief Lancium's motion and for the Court to decide it, Lancium proposes that the Court should allow the parties to continue discovery on the inventorship

¹ During the parties' meet and confer, Plaintiffs took the position that a jury trial is needed on all counts and a full schedule through trial should be entered now. Despite the fact that inventorship is an equitable issue, Plaintiffs contended that they have a right to a jury trial on inventorship because of factual issues in common with their conversion, unjust enrichment, and negligent misrepresentation counts. This factual commonality, however, only reinforces that Plaintiffs' conversion, unjust enrichment, and negligent misrepresentation claims are preempted by federal law and should be dismissed.

issue that has already begun and convene a scheduling conference after the Court's decision on Lancium's motion. Lancium believes this is the most efficient path forward.

While Lancium believes considering and entering a scheduling order after a decision on its motion is the most efficient path forward, the parties met and conferred and jointly submit the proposed schedule attached to this letter. If the Court decides to issue a full scheduling order now, Lancium agrees to the attached scheduling proposal while reserving the right to seek to amend that schedule depending on the outcome of its motion. For instance, if inventorship is the only surviving claim, Counts I and II could and should be tried to the bench on an abbreviated schedule.

III. ARGUMENT

A. The Court Should Adopt Defendants' Proposed Claim Constructions

1. Plaintiffs' Attempt To Avoid Claim Construction Is Meritless And Invites Reversible Error.

The inventorship analysis, like an infringement or invalidity analysis, “first *requires* the construction of each disputed claim to determine the subject matter encompassed thereby.” *Gemstar-TV Guide Int’l, Inc. v. Int’l Trade Comm’n*, 383 F.3d 1352, 1381-82 (Fed. Cir. 2004) (emphasis added). Where, as here, “reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute,” the court, not the jury, *must resolve that dispute.*” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360-61 (Fed. Cir. 2008) (emphasis added).

Here, the parties’ dispute the plain and ordinary meaning of the terms “power option agreement” and “minimum power threshold.” The ’433 patent describes and claims systems and methods that, among other things, help stabilize the power grid by utilizing “a power option agreement” and a “set of minimum power thresholds” to give a power entity the ability to balance power supply with demand. As discussed in Defendants’ Opening Brief (D.I. 149 at 3-5), the claimed system does this by giving a power entity (such as a grid operator) the “option” (through a “power option agreement”) to control a load by giving the power entity the ability to instruct the load to reduce the amount of power it is using (i.e., “curtail” the load). D.I. 151, Ex. 17 at 43:46-44:35; 59:2-62:38. To make that option possible, the load (per the power option agreement) is required to use a specified amounts of power (i.e., “minimum power thresholds”) over specified time periods, regardless of whether it is profitable for the load to use that power.² *Id.* at 43:57-44:2. By giving the power entity the ability to reduce the amount of power used by the load, the

² This is also consistent with Plaintiffs’ expert, Frank McCamant’s explanation of the requirements of agreements to provide ancillary services for ERCOT.” Ex. 33 at 59:1-13; 65:4-13.

power entity can make this now unused power available to the grid for use by others and thus provide stability to the grid during times of emergency when demand for power may exceed supply. *Id.*

Storms’ “system” (actually a simulation of a system) is completely different. As Dr. McClellan concedes, Storms’ “system”³ was designed to maximize profits for the Bitcoin miner by determining a breakeven mining price: “[I]t’s [Storms’ simulation/system] focusing on ways to make positive dollars by choosing a performance strategy that enhances the choice of mining versus sell back.” Ex. 30 at 235:9-239:10. Storms’ “system” (as described in the May 9, 2019 email and attachments he sent McNamara) ***does not teach*** that the system must use a minimum amount of power under any circumstances, much less if it is not profitable to do so. *See* Ex. 30 at 235:19-236:18 (testifying Storms’ system “doesn’t teach that”); *see also* 236:19-239:10 (explaining Storms’ simulation is designed only to use power to mine Bitcoin when it is profitable to do so and the simulation ignores the allegedly “nonsensical case” of using power when it would not be profitable to mine)).⁴

Plaintiffs, through their expert Dr. McClellan, attempt to circumvent these differences by proffering purported plain and ordinary meanings for “power option agreement” and “minimum power threshold” that are completely at odds with the specification and with how one of ordinary skill in the art would understand these terms in the context of the intrinsic evidence. For example, Dr. McClellan’s plain and ordinary meaning of “power option agreement” reads out the option: a “power option agreement” is “a contract to buy power at a certain price” (“essentially the same

³ Dr. McClellan indicates that the “system” in this context is the Bitcoin mine. Ex. 30 at 216:5-217:8.

⁴ Nor is there evidence that Mr. Storms’ simulation/“system” could determine the amount of power it was consuming so as to be able to maintain a power consumption target equal to or greater than a minimum power threshold for a given time interval. Ex. 30 at 129:14-133:17.

as” a Power Purchase Agreement (PPA), “I don’t know if power option agreement means you must consume – you must expend the power you contracted to buy ... that’s a question for McCamant ... that’s an ERCOT marketplace thing.”⁵ Ex. 30 at 83:3-87:1, 90:2-13, 156:3-22, 157:1-18. Similarly, with respect to “minimum power threshold,” Dr. McClellan ascribes various plain and ordinary meanings to the term depending on context. When discussing the ‘433 patent, he asserts it means “the amount of power you’re contracted to consume” (consume meaning either use, sell back, or both) but it is “a business question really ... the contract amount that your going to pay – I don’t think you have to use it ... this is a question for Mr. McCamant” *Id.* at 83:21-85:8; 90:14-92. But when discussing Storms’ system he asserts that “minimum power thresholds” relate to the breakeven calculation and price of Bitcoin: “the breakeven gives you the minimum power thresholds ... It’s [the minimum power threshold] whatever power is driving the calculation of the breakeven mining cost based on what the bitcoin mining cost bitcoin difficulty is.” *Id.* at 218:23-223:9. Plaintiffs’ Opposition, moreover, applies yet another interpretation, asserting that the plain and ordinary meaning is “the agreed upon amount of power by which the power entity may reduce power delivered to the load.” D.I. 176 at 18. Thus, claim construction is needed because the meaning of claim terms cannot be twisted like a “nose of wax” to suit Plaintiffs’ changing needs. *See Innova/Pure Water, Inc. v. Safari Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004), quoting *White v. Dunbar*, 119 U.S. 47, 51-52 (1886).⁶

⁵ Mr. McCamant does not opine on the plain and ordinary meaning of any terms of the ‘433 patent and has not read it. Ex. 33 at 15:8-16:22.

⁶ Plaintiffs’ assertion that Defendants should have sought claim construction sooner is meritless. As explained in Defendants’ Opening Brief, it was not until Defendants received Plaintiffs’ expert reports and deposed Plaintiffs’ experts that it became clear how Plaintiffs’ interpreted the plain and ordinary meaning of “power option agreement” and “minimum power threshold” as used in the ‘433 patent and that the parties disagreed about their plain meaning. *See* D.I. 149 at 12-13. Plaintiffs provide no evidence to the contrary. Furthermore, Plaintiffs’ contention that Defendants should have raised the claim construction dispute in the 32 days between the close of expert

2. Plaintiffs' Arguments Against Defendants' Construction Of "Power Option Agreement" Are Meritless.

The specification—as thoroughly addressed in Defendants' Opening Brief—"is always highly relevant to the claim construction analysis." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc). Put differently, "the ordinary meaning of a claim term is not 'the meaning of the term in the abstract.' ... [rather] the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." *AstraZeneca AB v. Mylan Pharm. Inc.*, 19 F.4th 1325, 1330 (Fed. Cir. 2021). Plaintiffs' Opposition largely ignores the specification, and instead posits three meritless, easily-dispelled criticisms of Defendants' construction.⁷

First, Plaintiffs assert that Defendants' construction is "internally inconsistent because it does not allow for scenarios in which the option is exercised by a power entity." D.I. 176 at 17. Not so. As Defendant's Opening Brief makes clear, a key aspect of a power option agreement is that it gives the power entity the "option" to reduce the amount of power used by the load. Defendants' proposed construction explicitly explains, *inter alia*, that a power option agreement "provides the power entity with the option to reduce the amount of power delivered to the load." Nonetheless, Defendants would not oppose a construction (adding the underlined portion below) that "power option agreement" means "an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option

discovery and the summary judgment deadline is misplaced. Summary judgment was the most efficient and practical way for the Court to timely resolve the dispute. And Plaintiffs do not and cannot dispute that claim construction may properly be conducted as part of the summary judgment process. *Compare* D.I. 149 at 11 (citing *Level Sleep LLC v. Sleep No. Corp.*, No. 2020-1718, 2021 WL 2934816, at *3 (Fed. Cir. July 13, 2021), *with* D.I. 176 at 15-17.

⁷ Plaintiffs' assertion that Defendants' expert, Dr. Ehsani "performs no claim construction of his own" is also a mischaracterization. D.I. 176 at 17. Dr. Ehsani did analyze and apply the meaning of "power option agreement" and "minimum power threshold" as used in the '433 patent. *See, e.g.*, Ex. 41 at ¶¶ 44, 106-109.

to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the interval unless the power entity exercises the option.”

Second, Plaintiffs assert that Defendants’ construction is “inconsistent with the remaining language of the claim” because allegedly “[t]he claim itself defines the ‘power option agreement’ in terms of its ‘data,’ which includes ‘minimum power thresholds.’” D.I. 176 at 17-18. Plaintiffs thus contend that any construction of “power option agreement” should “continue to use the term ‘minimum power threshold’” so that these terms are not applied inconsistently. *Id.* at 18. Plaintiffs’ are again wrong. To begin, Plaintiffs’ argument is inconsistent with its own expert’s proposed plain and ordinary meaning for “power option agreement,” which does not include “minimum power thresholds.” Ex. 30 at 83:3-87:1; 90:2-13; 156:3-22; 157:1-18. Also, the claim does not define “power option agreement” in terms of its “data.” Rather, the claim makes clear that the “power option data” is supplied “at least in part” based on a “power option agreement.” A patentee’s use of different words in a patent’s claim creates a presumption that those different words have different meanings. *See, e.g., Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 132, 1328 (Fed. Cir. 2006). Finally, although Plaintiffs assert any construction of “power option agreement” should include “minimum power threshold,” they also argue that “the plain meaning of minimum power threshold is recited in the claim itself: the amount of power subject to the power option agreement.” D.I. 176 at 18. Thus, they propose circular meanings that refer to each other, but this circular reasoning “constitutes improper claim construction.” *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1090 (Fed. Cir. 2003); *see also Univ. of Fla. Rsch. Found. v. Motorola Mobility, LLC*, 3 F. Supp. 3d 1374, 1377 (S.D. Fla. 2014).

Finally, Defendants’ construction is not “inconsistent with the specification.” D.I. 176 at

18. To the contrary, as thoroughly explained in Defendants' Opening Brief, Defendants' construction is based explicitly on the specification's definition of the term, which, as discussed below, would permit a minimum power threshold of zero for some time intervals.

3. Plaintiffs' Arguments Against Defendants' Construction Of "Minimum Power Threshold" Are Meritless.

Plaintiffs' assertion in their Opposition that the "plain meaning" of "minimum power threshold" is "the amount of power subject to the power option agreement, *i.e.* the agreed amount of power by which the power entity may reduce power delivered to the load" seeks to eliminate the clear requirement that the "minimum power threshold" is an amount of power the load must use.⁸ As set forth in Defendants' Opening Brief, the specification repeatedly emphasizes this aspect of the term's meaning. For example, the specification states:

"As part of the power option agreement, the load (e.g., load operator, contracting agent for the load, semi-automated control system associated with the load, and/or automated control system associated with the load) provides the power entity 1140 with the right, but not obligation, to reduce the amount of power delivered (e.g., grid power) to the load up to an agreed amount of power during an agreed upon time interval. In order to provide the power entity 1140 with this option, the load needs to be **using** at least the amount of power subject to the option (e.g., a **minimum power threshold**)." D.I. 151, Ex. 17 at 43:50-60 (emphasis added).

Similarly, the specification further explains that:

"To illustrate an example, a power option agreement may specify that a load (e.g., the datacenters 1102-1106) is required to use at least 10 MW or more at all times during the next 12 hours. Thus, the **minimum power threshold** according to the power option agreement is 10 MW and this minimum threshold extends across the time interval for the next 12 hours. In order to comply with the agreement, the load must subsequently operate **using** 10 MW or more power at all times during the next 12 hours." D.I. 151, Ex. 17 at 44:17-25 (emphasis added).

Plaintiffs' assertions that Defendants' construction is "internally inconsistent" and

⁸ And as explained above, their expert Dr. McClellan applies different alleged "plain and ordinary" meanings of "minimum power threshold." Those interpretations also seek to eliminate the use requirement.

“inconsistent with the language of the claim” are baseless and Plaintiffs provide no explanation in support of these assertions. And again Plaintiffs’ circular position that the constructions of “power option agreement” and “minimum power threshold” should each include the other term, is wrong and would improperly inject ambiguity into the claims. *See ACTV*, 346 F.3d at 1090; *Univ. of Fla. Rsch. Found.*, 3 F. Supp. 3d at 1377. Finally, Plaintiffs argue that Defendants’ construction fails because it does not permit the minimum power threshold to be zero for the entire duration of the power option agreement. But the portions of the specification cited by Plaintiffs refer only to the minimum power threshold being zero for a time interval during the duration of the power option agreement, not for all time intervals during the duration of the power option agreement. D.I. 176 at 18-19 (citing specification). Defendants’ proposed construction contemplates and allows the minimum threshold to be zero (or not specified) for certain time intervals, as further discussed in the next sections.

B. Plaintiffs’ Sole Inventorship Claim Fails As A Matter Of Law

1. Plaintiffs’ Attempt To Rely On Attorney Argument Rather Than Actual Evidence To Avoid Summary Judgment Should Be Rejected.

Although Plaintiffs argue against summary judgment on their sole inventorship claim by repeatedly asserting that there are genuine issues of material fact, notably absent from their eight pages of argument is any evidence to support their position. This is unsurprising because Plaintiffs’ inventorship claims are based on a fundamental misinterpretation of the ‘433 patent and its claims. Thus, Plaintiffs must rely on pure attorney argument for their contention that Storms’ conceived of and communicated the inventions of the ‘433 patent as properly construed. But this is insufficient to avoid summary judgment.⁹

⁹ Moreover, although they acknowledge that “[t]o prevail on sole inventorship at trial, Plaintiffs must prove (1) that Storms independently conceived the inventions claimed in the ‘433 Patent, and (2) that he communicated those inventions to Defendants” (D.I. 176 at 14), Plaintiffs’ expert Dr.

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<p style="text-align: right;">Page 14</p> <p>1 established?</p> <p>2 A. No.</p> <p>3 Q. Do you know whether or not cryptocurrency market</p> <p>4 prices are real-time prices?</p> <p>5 A. No. 09:16</p> <p>6 Q. You're not -- you are not an expert on data</p> <p>7 centers that may be used to mine cryptocurrencies,</p> <p>8 correct?</p> <p>9 MR. HORTON: Objection to form.</p> <p>10 A. Can you repeat the question, please? 09:16</p> <p>11 Q. You are not an expert on data centers that may</p> <p>12 be used to mine cryptocurrencies, correct?</p> <p>13 A. I'm -- I'm not an expert, but I do have a</p> <p>14 rudimentary understanding of how data centers operate.</p> <p>15 Q. Can you explain your understanding of how data 09:16</p> <p>16 centers operate?</p> <p>17 A. Well, my understanding is data centers are large</p> <p>18 computing centers that require a lot of, uh, electrical</p> <p>19 power. Uh, so they are large load and that data centers</p> <p>20 may or may not be able to have, uh, control systems that 09:17</p> <p>21 would allow them to respond to different signals that</p> <p>22 could, uh, change their load settings.</p> <p>23 Q. What do you mean by load settings?</p> <p>24 A. Uh, power consumption.</p> <p>25 Q. Do you understand that in this case 09:18</p>	<p style="text-align: right;">Page 16</p> <p>1 patents as part of your work in this case, correct?</p> <p>2 A. I have not.</p> <p>3 Q. You are not relying on the prosecution history</p> <p>4 of any patents for the opinions that you're offering in</p> <p>5 this case, correct? 09:20</p> <p>6 A. That is correct.</p> <p>7 Q. You are not offering any opinions on the meaning</p> <p>8 of any terms used in patents in this case, correct?</p> <p>9 A. That is correct.</p> <p>10 Q. You are not offering any opinions on what a 09:20</p> <p>11 power option agreement is as used in the '433 Patent in</p> <p>12 this case, correct?</p> <p>13 A. That is correct.</p> <p>14 Q. You are not offering any opinions on what power</p> <p>15 option data is as used in the '433 Patent in this case, 09:21</p> <p>16 correct?</p> <p>17 A. That is correct.</p> <p>18 Q. You are not offering any opinions regarding</p> <p>19 whether or not Michael McNamara, Ray Cline, or Lancium</p> <p>20 converted any property owned by Mr. Storms or BearBox, 09:21</p> <p>21 correct?</p> <p>22 A. That is correct.</p> <p>23 Q. You were retained by Austin Storms and BearBox</p> <p>24 in this case, right?</p> <p>25 A. Through their legal counsel, yes. 09:22</p>
<p style="text-align: right;">Page 15</p> <p>1 Austin Storms claims that he is either a sole or a joint</p> <p>2 inventor of U.S. Patent No. 10608433, which is also</p> <p>3 referred to as the '433 Patent?</p> <p>4 MR. HORTON: Objection, form.</p> <p>5 A. Those details about Mr. Storm I do not -- I'm 09:18</p> <p>6 not aware of. I'm aware that he's the -- the, uh,</p> <p>7 plaintiff in this case.</p> <p>8 Q. You are not offering any opinions regarding who</p> <p>9 invented U.S. Patent No. 10608433, also called the '433</p> <p>10 Patent, right? 09:18</p> <p>11 A. I am not.</p> <p>12 Q. If I refer to the '433 Patent, do you understand</p> <p>13 that I'm referring to U.S. Patent No. 10608433?</p> <p>14 A. I don't -- I don't know what patent that is.</p> <p>15 Q. Have you reviewed any patents as part of your 09:19</p> <p>16 work on this case?</p> <p>17 A. I have not.</p> <p>18 Q. You do not cite to any patents in the reports</p> <p>19 you offered in this case, correct?</p> <p>20 A. That is correct. 09:19</p> <p>21 Q. And you are not relying on any patents for any</p> <p>22 of the opinions that you are offering in this case,</p> <p>23 right?</p> <p>24 A. That's correct.</p> <p>25 Q. You have not read the prosecution history of any 09:19</p>	<p style="text-align: right;">Page 17</p> <p>1 Q. When were you retained in this case?</p> <p>2 A. Uh, I don't remember the exact date. It was the</p> <p>3 first of this year.</p> <p>4 Q. It was January 1st of this year?</p> <p>5 A. Some -- somewhere around the first of this year. 09:22</p> <p>6 I don't remember the exact date.</p> <p>7 Q. Did you begin working on this case around the</p> <p>8 first of January, 2022?</p> <p>9 A. Uh, yes, I believe so sometime in that month, to</p> <p>10 the best of my memory. 09:22</p> <p>11 Q. You are being paid \$300 an hour for your work on</p> <p>12 this case, correct?</p> <p>13 A. That's correct.</p> <p>14 Q. Is \$300 per hour your standard billing rate?</p> <p>15 A. For this type of work it is. 09:23</p> <p>16 Q. When you say for this type of work, what do you</p> <p>17 mean?</p> <p>18 A. Well, in terms of, uh, doing expert testimony.</p> <p>19 Q. Do you have a different rate that you charge for</p> <p>20 other types of work? 09:23</p> <p>21 A. Uh, well, it depends on what the work is. I</p> <p>22 have some clients that are on a retainer type of, uh,</p> <p>23 contract.</p> <p>24 Q. Are you paid an hourly rate for any consulting</p> <p>25 work that you do separate from litigation work? 09:23</p>

5 (Pages 14 - 17)

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Appx5678

Message

From: Austin Storms [austin@bearbox.io]
 on behalf of Austin Storms <austin@bearbox.io> [austin@bearbox.io]
 Sent: 5/6/2019 4:51:10 PM
 To: Todd Garland [todd@buysellads.com]
 Subject: Re: Fwd: EXELON DATA MODELING DUMP 2

Hey Todd,

Same! Great talking to you as well and thanks for the advice on not selling myself short - I've been thinking about it since our conversation.

I've got two different models for breakeven - the sheet I sent you is just the breakeven cost to turn_off your miners (where mining_revenue = electricity_cost_opex) in 5-min increments (see below).

```
def get_breakeven_USD_per_kWh(miner_hashrate, hashrate, BTC_price, kW_load):
    try:
        breakeven = ((miner_hashrate / hashrate) * (block_reward * 144) * (BTC_price)) / (kW_load * 24)
        return breakeven
    except Exception as e:
        print("Error: " + str(e))
```

There's another model that amortizes the cost of the miners (S9s or equivalent generation) over a 12-month useful life with \$0 resale value - but it wasn't done by the time I got to Boston. I just finished converting the scripts from local SQLite3 dbs to postgresSQL this morning and will send over some data when it's run for a day or two if you're interested.

```
def get_breakeven_USD_per_kWh(miner_hashrate, hashrate, BTC_price, kW_load, miner_cost,
    expected_blocks_daily):
    try:
        revenue_5min = ((miner_hashrate / hashrate) * (block_reward * expected_blocks_daily) *
            (BTC_price)) / (12*24)
        #print(revenue_5min)

        amortized_5min_cost = ((miner_cost * 272) / (12 * 24 * 30.5 * 12))
        #print(amortized_5min_cost)

        actual_5min_revenue = revenue_5min - amortized_5min_cost
        #print(actual_5min_revenue)

        breakeven = actual_5min_revenue / (kW_load/12)

        return breakeven
    except Exception as e:
        print("Error: " + str(e))
```

So I'm not sure that I need to get the PDUs UL certified themselves - they aren't manufactured, they're simply assembled out of existing components. I'm waiting to hear back from them on field-testing requirements and will let you know when I do.

Talk soon!

A

Austin M. Storms
 BearBox, LLC
 611 O' Keefe Avenue



New Orleans, LA 70113
austin@bearbox.io

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On Mon, May 6, 2019 at 3:17 PM Todd Garland <todd@buysellads.com> wrote:
Hi Austin,

I hope you had a nice time in Boston last week. It was great to put a face to the name and meet in person.

Question about the sheets... what do you factor into the "breakeven_mining_cost"? Is it all of the costs (hardware, labor, etc etc) or something else with less subjectivity to it (e.g. the amortization period of the hardware is definitely subjective)?

Do you have a sense what it would take cost wise to get your PDU's certified?

- Todd

Austin Storms wrote on 5/3/19 3:51 PM:

See attached.

Begin forwarded message:

From: Austin Storms <austin@bearbox.io>
Date: May 3, 2019 at 12:15:58 PM EDT
To: Austin Storms <austin@bearbox.io>
Cc: Ben Hakes <ben@paretoadvisors.com>
Subject: EXELON DATA MODELING DUMP 2

See attached.

Austin M. Storms
BearBox, LLC
611 O' Keefe Avenue
New Orleans, LA 70113
austin@bearbox.io

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43. I note that Dr. McClellan did not perform any claim construction. Instead, he applied the “plain and ordinary meaning of the claim terms.” (McClellan Report, at ¶ 49). But Dr. McClellan did not provide his understanding of the “plain and ordinary meaning” for any claim terms. I understand that Plaintiffs have the burden of proof on the inventorship issue.

44. To determine conception, I also apply the plain and ordinary meaning of the claim terms as would have been understood by a POSITA and, for certain terms, I discuss the specification’s use of those terms. I reserve the right to supplement my report should Plaintiffs’ or any of Plaintiffs’ experts use a different construction, or provide their understanding of the plain and ordinary meaning that is different than my understanding of the plain and ordinary meaning.

VII. LANCIMUM INDEPENDENTLY DEVELOPED, CONCEIVED, AND REDUCED ITS TECHNOLOGY TO PRACTICE, INCLUDING EACH OF THE INVENTIONS CLAIMED IN THE ’433 PATENT

45. It is my opinion that Lancium independently developed, conceived, and reduced its technology to practice, including each of the inventions claimed in the ’433 patent, and that such development, conception, and reduction to practice did not involve the use of any information allegedly provided to Mr. McNamara by Mr. Storms. As discussed above, my opinions are based on, among other things, my review of: (1) pleadings; (2) the ’632 application and the ’433 patent and its file history; (3) the parties’ Responses to Discovery (including documents cited in those responses); (4) the deposition testimony from this case and exhibits cited in same; (5) my review of other documents and materials; (6) the communications between Mr. Storms and Mr. McNamara; and (7) my education and forty-plus years of experience. I also relied in part on Mr. Siddiqi’s analysis as set forth in his report, and Mr. Baer’s analysis of the source code produced by Mr. Storms and relied upon by Dr. McClellan as discussed in Mr. Baer’s report.

monetary consideration.¹⁰⁴ The power entity may use the power option agreement to reserve the right to reduce the amount of grid power delivered to the load during a set time frame such as when the grid power may be better directed to other loads.¹⁰⁵

108. The remote master control system can serve as a control system to the load and can do so by, for example, monitoring conditions¹⁰⁶ in concert with the minimum power thresholds and time intervals set forth in (or derived from) the power option agreement (*e.g.*, power option data) to determine performance strategies and issue instructions based on those strategies that enable the load to meet the expectations of the power option agreement while efficiently using power to accomplish computational operations.¹⁰⁷ The patent explains that the power entity may be a grid operator, local station control system, power generation source, or a qualified scheduling entity (QSE).¹⁰⁸

109. The patent explains that power option agreements may be fixed duration power option agreements or dynamic power option agreements.¹⁰⁹ Referring to Figure 12 (below), which represents power option data based on a fixed duration power option agreement, the dark, multi-level line distinguishing the more darkly-shaded area represents the minimum power thresholds in

¹⁰⁴ *Id.* at 43:65-44:2.

¹⁰⁵ *Id.* at 44:3-35.

¹⁰⁶ The patent provides examples of monitored conditions, including, but not limited to, power availability, power prices, computing system parameters, cryptocurrency prices, computational operation parameters, and weather conditions. *Id.* at 47:57-48:61.

¹⁰⁷ *Id.* at 45:5-21.

¹⁰⁸ *Id.* at 45:52-60; 46:20-30.

¹⁰⁹ *See generally* Columns 46-47; *see also* 50:53-51:7

I. INTRODUCTION

The unsupported factual allegations in Plaintiffs' Brief in Opposition to Defendants' First Motion for Summary Judgment (Plaintiffs' "Opposition," D.I. 176) are a work of fiction that would make J.K. Rowling proud. Through cherry-picked citations, strategic omissions, and attributing functionality to Storms' alleged technology that is in no way supported by the evidence, Plaintiffs' Opposition incorrectly portrays Lancium as a struggling company that allegedly resurrected itself by converting and patenting Storms' "technology." The non-fiction version is different, but rather than address every misstatement and omission, Defendants focus on the issues important to deciding this motion.

Plaintiffs first attempt to avoid summary judgment by arguing that no claim construction is necessary for the terms "power option agreement" and "minimum power threshold" and fault Defendants for raising the issue in the context of summary judgment. *See* D.I. 176 at 15-19. But it was only during the deposition of Plaintiffs' expert, Dr. McClellan, that Defendants learned Plaintiffs' proposed plain and ordinary (and often contradictory) meanings of these terms. *See, e.g.,* Ex. 30 at 83:5-10; 90:2-13; 156:3-22; 157:1-18 (discussing "power option agreement") 83:21-85:8; 90:14-92:24; 154:21-156:24; 218:23-223:9 (discussing "minimum power thresholds"). Prior to that deposition, Plaintiffs had failed to disclose the plain and ordinary meaning of these terms in discovery, their experts' reports, and even in their Opposition (which fails to actually provide Plaintiffs' understanding of the plain and ordinary meaning of "power option agreement"). Defendants also learned during Dr. McClellan's deposition that Plaintiffs' plain and ordinary meanings are completely at odds with the '433 patent's specification and claims. The Court, therefore, should resolve the legal meaning of these disputed terms.

Plaintiffs next advance a variety of arguments relating to whether Storms conceived the systems and methods of the '433 patent, communicated these inventions to McNamara, and

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September 28, 2022

VIA CM/ECF

The Honorable Gregory B. Williams
United States District Court for the District of Delaware
J. Caleb Boggs Federal Building
844 N. King Street
Wilmington, DE 19801-3570

Re: *BearBox LLC, et al. v. Lancium LLC et al.* (C.A. No. 1:21-cv-534-GBW-CJB)

Dear Judge Williams:

In light of the recent reassignment of this case to Your Honor as well as the upcoming trial and associated pretrial filings, I write on behalf of Defendants Lancium LLC, Michael T. McNamara, and Raymond E. Cline, Jr. to renew Defendants' request for oral argument (D.I. 201) regarding their Motion for Summary Judgment (D.I. 148) and Motion for Summary Judgment Regarding Damages and Motion to Exclude Opinions of David Duski (D.I. 167) (the "Motions").

Oral argument is especially appropriate as to Defendants’ Motion for Summary Judgment because it involves a claim construction dispute, and the Court has not previously conducted claim construction in the case. For correction of inventorship claims regarding an issued United States patent, like Plaintiffs’ claims here, “the inventorship analysis, like an infringement or invalidity analysis, first requires the construction of each disputed claim to determine the subject matter encompassed thereby.” *Gemstar-TV Guide Int’l, Inc. v. Int’l Trade Comm’n*, 383 F3d 1352, 1381–82 (Fed. Cir. 2004).

In addition, resolution of the Motions may impact whether the upcoming trial, which is currently scheduled to begin on December 5, 2022 (D.I. 35), will be a jury trial or a bench trial. This is because, although Plaintiffs assert claims for correction of patent inventorship under 35 U.S.C. § 256 as well as claims arising under state law, there is no right to a trial by jury for claims for correction of inventorship. *See, e.g., MCV, Inc. v. King-Seeley Thermos Co.*, 870 F.2d 1568, 1570 (Fed. Cir. 1989) (“section 256 [] explicitly authorizes judicial resolution of co-inventorship contests over issued patents”). Resolution of Magistrate Judge Burke’s recommendations in the Report and Recommendation (D.I. 143) regarding Defendants’ Motion to Dismiss (D.I. 120), including the recommendation that Plaintiffs’ unjust enrichment claim be dismissed—to which Plaintiffs did not object—may also impact whether the trial is a jury or bench trial.

The Honorable Gregory B. Williams
September 28, 2022
Page 2

Respectfully submitted,



Chad S.C. Stover (No. 4919)

cc: Counsel of Record (via CM/ECF)

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

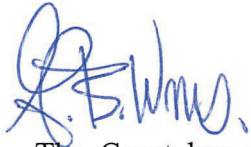
LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E.
CLINE, JR.,

Defendants.

Civil Action No. 21-534-GBW

MEMORANDUM OPINION

This action stems from a dispute regarding the proper inventorship of U.S. Patent No. 10,608,433 (“the ’433 patent”), as well as other related state-law claims. *See generally* D.I. 103. On March 16, 2022, Defendants Lancium LLC, Michael T. McNamara, and Raymond E. Cline, Jr. (collectively, “Lancium”) filed a motion, under Federal Rule of Civil Procedure 12(b)(6), to dismiss Plaintiffs BearBox LLC’s and Austin Storms’s (collectively, “BearBox”) conversion and unjust enrichment claims from BearBox’s Second Amended Complaint (the “Motion”). D.I. 120. The parties briefed the issues and Magistrate Judge Burke heard oral argument on May 23, 2022. *See, e.g.*, D.I. 121; D.I. 128; D.I. 133; D.I. 136. On May 26, 2022, Magistrate Judge Burke issued a Report and Recommendation (the “Report”) recommending that the Court grant-in-part Lancium’s Motion and dismiss BearBox’s unjust enrichment claim (Count VI) but deny Lancium’s Motion as to BearBox’s conversion claim (Count V). D.I. 143. Lancium filed objections to the Report on June 9, 2022 (D.I. 146), and BearBox filed its response to the objections on June 23, 2022 (D.I. 158).



The Court has reviewed the Report, the objection and the response thereto, and has considered *de novo* the parties' briefing and supporting documents related to Lancium's Motion, as well as the transcript of the oral argument. *See, e.g., St. Clair Intellectual Prop. Consultants, Inc. v. Matsushita Elec. Indus. Co.*, 691 F. Supp. 2d 538, 541-42 (D. Del. 2010); 28 U.S.C. § 636(b)(1); FED. R. CIV. P. 72(b)(3). For the reasons set forth below, Lancium's objections to the Report are **OVERRULED** and the Report's recommendations are **ADOPTED**.

I. STANDARD OF REVIEW

In reviewing a Magistrate Judge's Report and Recommendation, the Court must "make a *de novo* determination of those portions of the report or specified proposed findings or recommendations to which objection is made." 28 U.S.C. § 636(b)(1)(C). The Court may "accept, reject, or modify, in whole or in part" the Magistrate Judge's findings or recommendations. *Id.* As to those portions to which no objections have been made, the Court must "satisfy itself that there is no clear error on the face of the record in order to accept the recommendation." FED. R. CIV. P. 72(b) Advisory Committee Notes; *see Henderson v. Carlson*, 812 F.2d 874, 878 (3d Cir. 1987) (explaining the district court's responsibility "to afford some level of review" when no objections have been made).

II. DISCUSSION

As discussed in greater detail below, BearBox's Second Amended Complaint fails to state a claim for unjust enrichment. However, BearBox has adequately pled facts sufficient to state a claim for conversion under Louisiana law. As such, the Report is ADOPTED, and Lancium's Motion is granted as to BearBox's unjust enrichment claim (Count VI) but denied as to BearBox's conversion claim (Count V).

a. Legal Standard

To state a claim on which relief can be granted, a complaint must contain “a short and plain statement of the claim showing that the pleader is entitled to relief” Fed. R. Civ. P. 8(a)(2). Such a claim must plausibly suggest “facts sufficient to ‘draw the reasonable inference that the defendant is liable for the misconduct alleged.’” *Doe v. Princeton Univ.*, 30 F.4th 335, 342 (3d Cir. 2022) (quoting *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009)) (citing *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 557 (2007)). “A claim is facially plausible ‘when the plaintiff pleads factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged.’” *Klotz v. Celentano Stadtmauer & Walentowicz LLP*, 991 F.3d 458, 462 (3d Cir. 2021) (quoting *Iqbal*, 556 U.S. at 678). However, the Court will “‘disregard legal conclusions and recitals of the elements of a cause of action supported by mere conclusory statements.’” *Princeton Univ.*, 30 F.4th at 342 (citation omitted).

“‘The issue is not whether a plaintiff will ultimately prevail but whether the claimant is entitled to offer evidence to support the claims.’” *Pinnavaia v. Celotex Asbestos Settlement Tr.*, 271 F. Supp. 3d 705, 708 (D. Del. 2017) (quoting *In re Burlington Coat Factory Sec. Litig.*, 114 F.3d 1410, 1420 (3d Cir. 1997)), *aff’d*, 2018 WL 11446482 (3d Cir. Apr. 6, 2018). “A motion to dismiss ‘may be granted only if, accepting all well-pleaded allegations in the complaint as true, and viewing them in the light most favorable to plaintiff, plaintiff is not entitled to relief.’” *McCrone v. Acme Markets*, 561 F. App’x 169, 172 (3d Cir. 2014) (quoting *Burlington Coat Factory*, 114 F.3d at 1420).

b. Unjust Enrichment

The Report recommended dismissing BearBox’s unjust enrichment claim (Count VI) with prejudice because BearBox has pled the existence of other remedies at law, which precludes a

claim of unjust enrichment. D.I. 143. Neither party objects to this part of the Report. D.I. 143; D.I. 158. Thus, to accept the Report's findings, the Court need only satisfy itself that there "is no clear error on the face of the record." FED. R. CIV. P. 72(b) Advisory Committee Notes.

Accordingly, the Court agrees with the Report's conclusion. Under Louisiana law, which both parties agree applies to BearBox's state law claims (*see* D.I. 92 at 5 n.4), unjust enrichment is an equitable claim that is "only applicable to fill a gap in the law where no express remedy is provided." *Walters v. Medsouth Record Mgmt. LLC*, 38 So. 3d 243, 244 (La. 2010) (quoting *Mouton v. State*, 525 So.2d 1136, 1142 (La. App. 1st Cir. 1988)). However, and as the Report correctly notes, BearBox has pled another type of legal remedy—damages for Lancium's purported conversion of BearBox's technology—for the same conduct that is at issue in its unjust enrichment claim. D.I. 103 at ¶¶ 84-90. Thus, BearBox is precluded from seeking an unjust enrichment remedy for that conduct regardless of whether it is ultimately unable to pursue its remedy for conversion in this proceeding. *See Ferrara Fire Apparatus, Inc. v. JLG Indus.*, 581 F. App'x 440, 443-44 (5th Cir. 2014) (citing *Garber v. Badon & Rainer*, 981 So.2d 92, 100 (La. App. 3 Cir 2008) ("[I]t is not the success or failure of other causes of action, but rather the existence of other causes of action, that determine whether unjust enrichment can be applied.")). BearBox's unjust enrichment claim (Count VI) is dismissed with prejudice.

c. Conversion

The Report recommended denying Lancium's Motion as to BearBox's conversion claim because BearBox has pled sufficient facts to establish the elements of conversion under Louisiana law. D.I. 143. Neither party disputes that BearBox's conversion claim is premised on the alleged conversion of electronic documents. Rather, Lancium asserts that such conduct is insufficient to establish a conversion claim under Louisiana law because "[d]eprivation of possession is a

necessary element,” and BearBox was never deprived of its electronic documents. D.I. 146 at 4-5. Both parties agree that BearBox retained copies of electronic documents even after they were allegedly converted by Lancium. D.I. 103 at ¶¶ 84-90; D.I. 146 at 3; D.I. 143. Thus, the dispute centers around whether, under Louisiana law, a claim of conversion can be brought where an owner is not completely deprived of the property at issue, i.e., the owner has retained copies of the property.

BearBox contends that retaining copies of electronic documents does not negate a claim of conversion because Louisiana law broadly interprets conversion to include any unlawful interference with ownership or possession of one’s movable property. *Dual Drilling Co. v. Mills Equip. Invs., Inc.*, 721 So. 2d 853, 857 (La. 1998); D.I. 158 at 5, 7. Thus, “even if a plaintiff is not completely dispossessed of all copies of its property, a defendant could still be said to have taken steps to have wrongfully deprived the plaintiff of ‘ownership’ of the property.” D.I. 158 at 7 (quoting D.I. 143). Lancium avers that wrongful interference with a party’s ownership of its property is not an independent basis for a conversion claim. D.I. 146 at 7. Rather, wrongful deprivation of one’s property—which necessitates *complete* dispossession—is an underlying requirement for a conversion claim. *Id.* at 6 (emphasis added).

Louisiana defines conversion as “an act in derogation of the plaintiff’s possessory rights, *and* any wrongful exercise or assumption of authority over another’s goods, depriving him of the possession, permanently or for an indefinite time” *Quealy v. Paine, Webber, Jackson & Curtis, Inc.*, 475 So. 2d 756, 760 (La. 1985) (emphasis added); *see also Dileo v. Horn*, 189 So. 3d 1189, 1198 (La. Ct. App. 5 Cir. 2016) (“Conversion is committed when one wrongfully does any act of dominion over the property of another in denial of or inconsistent with the owner’s rights.”).

Guided by the Louisiana Supreme Court's illustrations,¹ a conversion is committed when:

1) possession is acquired in an unauthorized manner; 2) the chattel is removed from one place to another with the intent to exercise control over it; 3) possession of the chattel is transferred without authority; 4) possession is withheld from the owner or possessor; 5) the chattel is altered or destroyed; 6) the chattel is used improperly; or 7) ownership is asserted over the chattel.

Dual Drilling, 721 So.2d at 857 (La. 1998).

Based on the Court's review of Louisiana case law, conversion is not solely limited to instances of depriving an owner of its possessory rights in its property. Rather, conversion is a broadly defined tort that seeks to remedy "acts inconsistent with the owner's rights." *F.G. Bruschweiler (Antiques), Ltd. v. GBA Great British Antiques, L.L.C.*, 860 So. 2d 644, 649 (La. Ct. App. 5 Cir. 2003). Such acts can, and do, include wrongfully interfering with an owner's electronic documents, regardless of whether the owner has retained copies of the documents. *See Mabile v. BP, P.L.C.*, 2016 WL 5231839, at *1, *23 (E.D. La. Sept. 22, 2016) (permitting a conversion claim that was premised on the defendants obtaining plaintiff's electronic schematic although plaintiff also retained a copy). Contrary to Lancium's assertion, "deprivation of possession" is not a necessary element to conversion, but instead is one example of many enumerated by the Louisiana Supreme Court. *See, e.g., Dual Drilling*, 721 So.2d at 857 (La. 1998); *MCI Commc'ns Servs., Inc. v. Hagan*, 74 So. 3d 1148, 1154 (La. 2011).

Furthermore, the Court is not persuaded by Lancium's citation to *CamSoft Data Sys., Inc. v. S. Elecs. Supply, Inc.*, 2019 WL 2865359 (La. Ct. App. 1 Cir. 2019). *CamSoft*, a decision by the Court of Appeal of Louisiana, First Circuit, held that plaintiff's conversion claim could not

¹ Lancium is correct that "a federal court applying state law has a duty to decide a case as it believes the state's highest court would have done." D.I. 146 at 6 n. 4 (citing *Valley Forge Ins. Co. v. Jefferson*, 628 F. Supp. 502, 510 (D. Del. 1986)). Yet in the same breath, Lancium ignores binding Louisiana Supreme Court precedent illustrating seven examples where a conversion has been committed.

survive summary judgment where plaintiff retained copies of its allegedly converted property—confidential business information—and thus did not dispute that it was not completely deprived of its property. *See CamSoft*, 2019 WL 2865359, at *2-3. On this basis, Lancium extrapolates that total deprivation of an owner’s possessory rights is a required element and, thus, the existence of copies vitiates a conversion claim. D.I. 146 at 6-7. The Court does not read *CamSoft*² so narrowly. As *CamSoft* acknowledges, Louisiana law is clear that a conversion claim can be made out not only when a party unlawfully interferes with an owner’s possession of a movable, but also when a party unlawfully interferes with the party’s ownership of a movable. *See CamSoft*, 2019 WL 2865359, at *2 (citing *Dual Drilling*, 721 So.2d at 856). Thus, as the Report correctly concludes, “this leaves some room for a conversion claim as to property (such as the electronic data at issue here), where, even if a plaintiff is not completely dispossessed of all copies of that property, a defendant could still be said to have taken steps to have wrongfully deprived the plaintiff of ‘ownership’ of the property.” D.I. 143.

Accordingly, conversion under Louisiana law includes unlawfully interfering with a plaintiff’s ownership of movable property regardless of whether the plaintiff retains a copy of that movable property. That is what BearBox has alleged. D.I. 103 at ¶¶ 84-90. BearBox’s Second Amended Complaint asserts that Lancium took BearBox’s technology that BearBox rightfully owned, wrongfully assumed dominion and control over that technology, and then improperly used

² Although the Court declines to harmonize *CamSoft*’s holding with Louisiana’s conversion jurisprudence, the Court acknowledges BearBox’s assertion that *CamSoft*’s holding—which “decline[d] to extend the tort of conversion to immovable, intangible information [in electronic form]”—appears at odds with established Louisiana precedent. D.I. 158 at 9; *cf. South Central Bell Telephone Co. v. Barthelemy*, 643 So. 2d 1240, 1246 (La. 1994) (recognizing that conversion protects digital or electronic property); *State v. Williamson*, 81 So. 3d 156 (La. Ct. App. 5 Cir. 2011) (same); *see also First Am. Bankcard, Inc. v. Smart Bus. Tech., Inc.*, 2016 WL 5869787, at *5 (E.D. La. Oct. 7, 2016) (rejecting the argument that digital information stored on the cloud is not subject to conversion under Louisiana law).

that technology in Lancium’s Smart Response software, i.e., in a manner indicating to the world that they—not BearBox—owned that technology. *Id.* at ¶¶ 87-90. As such, the Court, having reviewed the record *de novo*, agrees with the Report’s conclusion that BearBox has pled sufficient facts to state a claim of conversion under Louisiana law. Lancium’s objection is overruled, and Lancium’s Motion is denied as to BearBox’s conversion claim (Count V).

The Court will issue an order consistent with this Memorandum Opinion.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E.
CLINE, JR.,

Defendants.

Civil Action No. 21-534-GBW

ORDER

At Wilmington this 7th day of October, 2022:

For the reasons set forth in the Memorandum Opinion issued this day, **IT IS HEREBY**

ORDERED that:

1. Defendants' Objections (D.I. 146) to the Report are **OVERRULED**;
2. The Report (D.I. 143) is **ADOPTED**;
3. Defendants' Motion (D.I. 120) is **GRANTED-IN-PART** and **DENIED-IN-PART**; and
4. Plaintiffs' unjust enrichment claim (Count VI) is dismissed with prejudice.



GREGORY B. WILLIAMS
UNITED STATES DISTRICT JUDGE

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E.
CLINE, JR.,

Defendants.

C.A. No. 21-534-GBW

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Counsel for Defendants

MEMORANDUM OPINION

FILED UNDER SEAL

October 28, 2022

Wilmington, Delaware



GREGORY B. WILLIAMS
UNITED STATES DISTRICT JUDGE

In this action filed by Plaintiffs BearBox LLC and Austin Storms (collectively, “BearBox”) against Defendants Lancium LLC, Michael T. McNamara, and Raymond E. Cline, Jr. (collectively, “Lancium”), BearBox seeks to correct the inventorship of United States Patent No. 10,608,433 (“the ’433 patent”), which is assigned to Lancium and lists Michael T. McNamara and Raymond E. Cline, Jr. as inventors. D.I. 103.

Presently before the Court is Lancium’s First Motion for Summary Judgment¹ regarding BearBox’s claims of sole inventorship, or, alternatively, joint inventorship. D.I. 148. Proper adjudication of Lancium’s First Motion for Summary Judgment raises the issue of claim construction of two disputed terms in the ’433 patent. D.I. 149 at 11-12. The Court has considered the parties’ claim construction arguments embedded within their respective summary judgment briefing. D.I. 149 at 11-19; D.I. 176 at 15-19; D.I. 195 at 5-11. The Court held a *Markman* hearing on October 20, 2022 (“Tr. ___”).

I. BACKGROUND

On February 16, 2022, BearBox filed its Second Amended Complaint (D.I. 103), asserting claims of sole inventorship, or alternatively, joint inventorship, of the ’433 patent, theft of trade secrets, conversion, and unjust enrichment. The Court struck BearBox’s trade secret claims on April 22, 2022. D.I. 111. Shortly thereafter, Lancium filed a Motion to Dismiss BearBox’s

¹ In addition to seeking summary judgment as to BearBox’s claims of sole inventorship, or, alternatively, joint inventorship, Lancium’s First Motion for Summary Judgment also moves for summary judgment as to BearBox’s conversion claim. D.I. 149 at 33-36. However, assessing Lancium’s motion requires the Court to construe two disputed terms. As such, this Opinion only addresses the parties’ arguments as to claim construction of the two disputed terms. A separate opinion assessing the merits of Lancium’s First Motion for Summary Judgment will follow.

conversion and unjust enrichment claims (D.I. 120), which the Court granted in part and dismissed the unjust enrichment claim. D.I. 212; D.I. 213. Lancium then filed its First Motion for Summary Judgment related to all remaining claims (D.I. 148), and later filed its Second Motion for Summary Judgment Regarding Damages and its Motion to Exclude Opinions of BearBox's Expert David Duski (D.I. 167).

Lancium's First Motion for Summary Judgment asserts that BearBox's inventorship claims fail as a matter of law because there is no evidence that Plaintiff Austin Storms conceived of, communicated, or collaborated on the inventions of the '433 patent. D.I. 149 at 1-2. The '433 patent generally relates to systems and methods for adjusting the amount of power available on the electrical grid based on interactions with the ancillary services markets. The '433 patent provides a summary of the claimed invention:

Examples relate to adjusting load power consumption based on a power option agreement. A computing system may receive power option data that is based on a power option agreement and specify minimum power thresholds associated with time intervals. The computing system may determine a performance strategy for a load (e.g., set of computing systems) based on a combination of the power option data and one or more monitored conditions. The performance strategy may specify a power consumption target for the load for each time interval such that each power consumption target is equal to or greater than the minimum power threshold associated with each time interval. The computing system may provide instructions the set of computing systems to perform one or more computational operations based on the performance strategy.

'433 patent at Abstract.

II. LEGAL STANDARDS

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted); *see also Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989) ("A claim in a patent provides

the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using, or selling the protected invention.”). “[T]here is no magic formula or catechism for conducting claim construction.” *Phillips*, 415 F.3d at 1324. The Court is free to attach the appropriate weight to appropriate sources “in light of the statutes and policies that inform patent law.” *Id.* The ultimate question of the proper construction of a patent is a question of law, although subsidiary fact-finding is sometimes necessary. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996)).

“The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citing *Phillips*, 415 F.3d at 1312–13). A person of ordinary skill in the art “is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313.

“When construing claim terms, [the court] first look[s] to, and primarily rely[s] on, the intrinsic evidence, including the claims themselves, the specification, and the prosecution history of the patent, which is usually dispositive.” *Sunovion Pharms., Inc. v. Teva Pharms. USA, Inc.*, 731 F.3d 1271, 1276 (Fed. Cir. 2013) (internal quotation marks and citations omitted). “Other claims of the patent in question, both asserted and unasserted, can . . . be valuable” in discerning the meaning of a disputed claim term because “claim terms are normally used consistently throughout the patent,” and so, “the usage of a term in one claim can often illuminate the meaning of the same term in other claims.” *Phillips*, 415 F.3d at 1314. In addition, “[d]ifferences among claims can also be a useful guide[.]” *Id.* For example, “the presence of a dependent claim that

adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* at 1314-15.

In addition to the claim, the Court should analyze the specification, which “is always highly relevant to the claim construction analysis . . . [as] it is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316 (citation omitted). “[E]ven when the specification describes only a single embodiment, [however,] the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal quotation marks omitted) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)). And, the specification “is not a substitute for, nor can it be used to rewrite, the chosen claim language.” *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004).

The Court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370, (1996). The prosecution history “can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution[.]” *Phillips*, 415 F.3d at 1317.

In some cases, the Court “will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841.

“Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. Overall, while extrinsic evidence may be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (internal quotation marks and citations omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. “power option agreement”

The claim term “power option agreement” appears in all independent claims of the ’433 patent. The parties’ competing proposed constructions for “power option agreement” are set out in the chart below:

Claim Term	Plaintiff BearBox’s Construction	Defendant Lancium’s Construction
“power option agreement”	“an agreement between a power entity associated with the delivery of power to a load, wherein the load provides the power entity the option to reduce the amount of power delivered up to a minimum power threshold”	“an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the time interval unless the power entity exercises the option”

Throughout BearBox’s summary judgment briefing, and initially during the *Markman* hearing, BearBox repeatedly asserted that the term “power option agreement” should be given its

plain and ordinary meaning.² *See, e.g.*, D.I. 176 at 15-19; Tr. at 6. While BearBox's proposed plain and ordinary meaning of "power option agreement" was not initially apparent, at the *Markman* hearing it became clear that BearBox was willing to accept much of Lancium's proposed construction, albeit not in its entirety, as the term's plain and ordinary meaning. *See* Tr. at 7-8. With that compromise, the remaining dispute centers on whether the term "power option agreement" requires that the load must use at least the amount of power subject to the option.³ *See* Tr. at 8, 16. For the reasons set out below, the Court construes the claim term "power option agreement" to mean:

"an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the time interval unless the power entity exercises the option."

² At the outset, the Court rejects any contention that the term "power option agreement" is equivalent to the term "power purchase agreement." Although BearBox did not argue this point at the *Markman* hearing, as Lancium highlighted, BearBox's expert, Dr. McClellan, equated "power option agreement" to "power purchase agreement" throughout his deposition. *See, e.g.*, McClellan Dep. Tr. at 83:5-10; 86:6-87:1; 157:1-18. But the two terms do not share a common meaning because "power purchase agreement" is explicitly distinguished from "power option agreement" in the '433 patent. *Compare* '433 patent at 3:1-6; 4:33-34; 5:8-11 (discussing power purchase agreements), *with* '433 patent at 43:45-60 (discussing a power option agreement). When construing terms, there is a presumption that "different terms in the claims connote different meanings." *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000); *see also Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 132, 1328 (Fed. Cir. 2006). Therefore, the term "power option agreement" is presumed to be distinct from "power purchase agreement."

³ Prior to the *Markman* hearing, the parties appeared to dispute which entity held the option subject to the power option agreement (i.e., the power entity or the load). D.I. 149 at 12-15; McClellan Dep. Tr. at 157:1-18 (testifying that the plain and ordinary meaning of "power option agreement" is "opting to purchase power ahead of time at a certain rate . . . I'm going to pay for that power, that's the option."). However, following BearBox's clarification as to its proposed plain and ordinary meaning of the term, it is clear that both parties agree that the power entity holds the option subject to the power option agreement. This is consistent with the '433 patent's explanation of "power option agreement." *See* '433 patent at 43:50-55 ("As part of the power option agreement, the load . . . provides the power entity with the right, but not obligation . . .").

The use of the disputed term in claim 1 of the '433 patent is representative.

1. A system comprising:

a set of computing systems, wherein the set of computing systems is configured to perform computational operations using power from a power grid;

a control system configured to:

monitor a set of conditions;

receive power option data based, at least in part, on a *power option agreement*, wherein the power option data specify:

(i) a set of minimum power thresholds, and

(ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals;

responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval; and

provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

'433 patent at claim 1 (emphasis added).

During oral argument, BearBox argued that “the claims do not require power consumption” by the load. Tr. at 8. In other words, BearBox contends that Lancium’s construction improperly reads in a limitation that is not present in the claim language, thereby running afoul to the canons of claim construction. *See id.* at 8-9. Similarly, BearBox argued that Lancium’s inclusion of the word “use” is not required by the claims and is inconsistent with the '433 patent’s repeated discussion of the word “consumption.” *Id.* Instead, BearBox urged the Court to adopt its

construction—which mirrors much of the first portion of Lancium’s proposed construction—because the term “minimum power threshold” (the second disputed term requiring construction) encapsulates the latter portion of Lancium’s construction, avoids redundancy, and does not improperly read in a “use” or “consumption” limitation. Tr. at 7, 23-24, 27.

In response, Lancium argues that its proposed construction is clearly supported by the specification’s definition of the term “power option agreement.” *See* D.I. 149 at 13; Tr. at 16-17. Although Lancium concedes that the claims do not include the word “use” or “consume,” *see* Tr. at 15, it argues that the claims necessarily require that the load “use” or “consume” at least the minimum power subject to the option for each specified time interval as defined in the power option agreement.⁴ *See id.* This is because the claim language explicitly requires that the system receive power option data (based in part on a power option agreement), which discloses a set of minimum power thresholds, and based on these thresholds, the system determines a performance strategy comprising power consumption targets equal to or greater than the minimum power threshold associated with each time interval. *See* ’433 patent at claim 1. Thus, the load is necessarily required to use at least the minimum amount of power subject to the option for each associated time interval because failing to do so would violate the power option agreement. Tr. at 15 (“[I]f you fall below [the minimum amount of power] from the zero to five level during the time period, then you violate the power option agreement because you’ve agreed to at least be consuming that much power. Because if you’re not consuming it, you can’t be cutback, there’s nothing for the grid to take back.”).

⁴ Lancium contends that the term “use” and “consume” mean the same thing in the context of the ’433 patent and can therefore be used interchangeably. *See* Tr. at 16. BearBox disagrees only to the extent that the two words have different meanings. *See* Tr. at 9-10. Based on the intrinsic evidence, the Court finds that the terms “use” and “consume” are used consistently throughout the ’433 patent to convey identical meanings.

The Court agrees with Lancium that the '433 patent specification defines the term “power option agreement.” The specification discloses that:

In general, a power option agreement is an agreement between a power entity **1140** associated with the delivery of power to a load (e.g., a grid operator, power generation station, or local control station) and the load (e.g., the datacenters **1102-1106**). As part of the power option agreement, the load (e.g., load operator, contracting agent for the load, semi-automated control system associated with the load, and/or automated control system associated with the load) provides the power entity **1140** with the right, but not obligation, to reduce the amount of power delivered (e.g., grid power) to the load up to an agreed amount of power during an agreed upon time interval. In order to provide the power entity **1140** with this option, the load needs to be using at least the amount of power subject to the option (e.g., a minimum power threshold).

'433 patent at 43:45-60.

The specification is further replete with examples supporting Lancium's assertion that any construction of “power option agreement” necessarily requires the load to “use” or “consume” at least the amount of power subject to the option (e.g., the minimum power threshold):

The power option agreement may be used by the power entity **1140** to reserve the right to reduce the amount of grid power delivered to the load during a set time frame (e.g., the next 24 hours). For instance, the power entity **1140** may exercise a predefined power option to reduce the amount of grid power delivered to the load during a time when the grid power may be better redirected to other loads coupled to the power grid. As such, the power entity **1140** may exercise power option agreements to balance loads coupled to the power grid.

....

To illustrate an example, a power option agreement may specify that a load (e.g., the datacenters **1102-1106**) is required to use at least 10 MW or more at all times during the next 12 hours. . . . In order to comply with the agreement, the load must subsequently operate using 10 MW or more power at all times during the next 12 hours. This way, the load can accommodate a situation where the power entity **1140** exercises the option.

'433 patent at 44:3-12,17-35.

During oral argument, BearBox argued that the specification did not “rise[] to the level of lexicography.” Tr. at 27. But this is not a situation where the patentees simply disclosed a single embodiment or used the term in the same manner in all embodiments. *See Helmsderfer v. Bobrick*

Washroom Equip., Inc., 527 F.3d 1379, 1381 (Fed.Cir.2008) (to be considered a lexicographer, “[i]t is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments.”). Rather, the patentees’ use of the phrase “is an” manifests a clear and express intention to define “power option agreement” in terms of the specification. *See* ’433 patent at 43:45. The Court cannot contemplate how the patentees could more clearly express their intention to define the disputed term. *See Phillips*, 415 F.3d at 1316 (Fed. Cir. 2005) (en banc) (“[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.”). Therefore, because the specification defines the term “power option agreement,” that definition governs the Court’s construction.

Further, contrary to BearBox’s assertion, construing “power option agreement” to require “use” or “consumption” of the power by the load does not violate claim construction canon. *See* Tr. at 9. Although it is often difficult to draw the “fine line between construing the claims in light of the specification and improperly importing a limitation from the specification into the claims,” *Continental Circuits LLC v. Intel Corp.*, 915 F.3d 788 (Fed. Cir. 2019) (quoting *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011)), that line “can be discerned with reasonable certainty and predictability if the court’s focus remains on understanding how a person of ordinary skill in the art would understand the claim terms.” *Phillips*, 415 F.3d at 1323. Here, a person of ordinary skill in the art would understand that the claim language necessarily requires that the load “use” or “consume” at least the amount of power subject to the option, because if the load is not consuming that amount of power, the power cannot be curtailed by the power entity exercising the option. ’433 patent at 43:57-60; *see also* D.I. 196-1, Ex. 41 at ¶ 107. Essentially, by not requiring the load to use or consume at least the minimum

amount of power subject to the option, the power entity's option is meaningless. Such a result renders claim 1 nonsensical because if the power entity's option could not be fully exercised, then the system could not determine a power consumption target equal to or greater than the minimum power subject to the option for each associated time interval. *See Neville v. Foundation Constructors, Inc.*, 972 F.3d 1350, 1357 (Fed. Cir. 2020) ("A claim construction that renders asserted claims facially nonsensical cannot be correct."). For the above reasons, the Court will adopt Lancium's proposed construction for the term "power option agreement."

B. "minimum power threshold"

The claim term "minimum power threshold" appears in all independent claims of the '433 patent. The parties' competing proposed constructions for "minimum power threshold" are set out in the chart below:

Claim Term	Plaintiff BearBox's Construction	Defendant Lancium's Construction
"minimum power threshold"	"a minimum amount of power delivered to a load unless the power entity exercises the option. A minimum power threshold may be zero"	"a minimum amount of power a load must use during an associated time interval"

Like the other disputed term, BearBox repeatedly asserted that the term "minimum power threshold" should be given its plain and ordinary meaning. *See* D.I. 176 at 18-19; Tr. at 32. Yet only at the *Markman* hearing did BearBox's interpretation of the term's plain and ordinary meaning become clear. Tr. at 32. With the benefit of this clarification, the parties' remaining dispute relates to whether the term "minimum power threshold" requires that the load must use at

least the amount of power subject to the option in the power option agreement.⁵ Tr. at 33-35. For the reasons set out below, the Court construes the claim term “minimum power threshold” to mean:

“a minimum amount of power a load must use during an associated time interval.”

The use of the disputed term “minimum power threshold” in claim 1 of the ’433 patent is again representative.

1. A system comprising:

a set of computing systems, wherein the set of computing systems is configured to perform computational operations using power from a power grid;

a control system configured to:

monitor a set of conditions;

receive power option data based, at least in part, on a power option agreement, wherein the power option data specify:

(i) a set of *minimum power thresholds*, and

(ii) a set of time intervals, wherein each *minimum power threshold* in the set of *minimum power thresholds* is associated with a time interval in the set of time intervals;

responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the *minimum power threshold* associated with each time interval; and

provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

⁵ The parties’ briefing initially indicated that there was a dispute regarding whether “minimum power threshold” could be zero for some, or all, of the time intervals in the power option agreement. D.I. 176 at 18-19; D.I. 195 at 10-11. However, at the *Markman* hearing, both parties agreed that the ’433 patent allows the minimum power threshold to be zero for one or more of the time intervals, but not the entirety of the power option agreement. See Tr. at 32-33, 37-38.

'433 patent at claim 1 (emphases added).

According to BearBox, while the load will “more often than not, if not always” use or consume the minimum amount of power subject to the power option agreement, the claims do not require that the load must use that minimum amount of power. Tr. at 3. Thus, BearBox argues that Lancium’s construction once again improperly imports a limitation not found in the claim language. *Id.* In response, Lancium contends that the claim language and intrinsic evidence reveal that “minimum power threshold” requires the load to use or consume at least the minimum amount of power subject to the power entity’s option. Tr. at 35. Lancium asserts that the specification not only explicitly defines the term, but Figure 12 clearly illustrates the requirement that the load “use” or “consume” at least the amount of power subject to the option. *Id.* at 36-37.

The Court finds that the claim language supports Lancium’s construction. Claim 1 requires the performance strategy to determine power consumption targets for each associated time interval that is equal to or greater than the minimum power threshold. *See* '433 patent at claim 1 (“[W]herein the performance strategy comprises a power consumption target . . . wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval”). Accordingly, the claim language itself mandates that the load consume at least the minimum power threshold for each associated time interval. *See Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) (claim construction analysis “must begin and remain centered on the language of the claims themselves, for it is that language the patentee chose to use to particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention”) (internal quotation omitted).

Moreover, the specification lends additional support for Lancium’s construction. The Court agrees that the specification defines “minimum power threshold” in context of requiring the

load to use at least the minimum power subject to the option. *See* '433 patent at 43:57-60 (“In order to provide the power entity **1140** with this option, the load needs to be using at least the amount of power subject to the option (e.g., a minimum power threshold)”); *Phillips*, 415 F.3d at 1316 (a patentee’s own lexicography governs). The '433 patent’s written description and embodiments consistently use the term “minimum power threshold” to require the load to use or consume the minimum amount of power subject to the option. *See, e.g.*, '433 patent at 45:16-20 (“[T]he remote master control system . . . may adjust its own power consumption based on the power option agreement (e.g., ramp up or down power consumption based on the defined minimum power thresholds during time intervals)”; *id.* at 46:1-4 (“[T]he power option data may specify the minimum power threshold or thresholds associated with one or more time intervals for the load to operate at”); *id.* at 55:22-24 (“In some examples, each power consumption target is equal to or greater than the minimum power threshold associated with each time interval.”). And the Court agrees with Lancium that Figure 12 illustrates that a proper construction of “minimum power threshold” requires that the load must use at least the minimum power threshold for each associated time interval to allow for the power entity to exercise the power option. *See id.* at Figure 12; *see also id.* at 51:28-34 (“[B]ased on the power option data shown in FIG. 12, the loads must be able to operate at a target power consumption level that is equal to or greater than the 5 MW minimum power threshold **1206A** at all times during the time interval extending from hour 0 to hour 8, in order to be able to satisfy the power option if it is exercised for that time interval.”).

The Court rejects BearBox’s use of the word “delivered” in its proposed construction. While the specification defines “power entity” as those entities “associated with the delivery of power to a load,” *see id.* at 43:47-48, the word “delivered” does not appear in the claim language of the '433 patent. Nor does the Court find support in the intrinsic or extrinsic evidence to include

the word “delivered” in the construction of the claim term “minimum power threshold.” Rather, the intrinsic evidence supports the Court’s construction requiring the load to use or consume at least the minimum power subject to the option because “minimum power threshold” assigns an obligation to the load, not the power entity. *Id.* at 43:57-60 (“In order to provide the power entity **1140** with this option, the load needs to be using at least the amount of power subject to the option (e.g., a minimum power threshold)”). Furthermore, the Court rejects BearBox’s assertion that any construction of the term must include that the minimum power threshold may be zero. Tr. at 33. A person of ordinary skill in the art reading the entirety of the patent understands that the minimum power threshold may be zero for some portion, but not the entirety, of the power option agreement. See ’433 patent at 54:13-18; *see also Phillips*, 415 F.3d at 1313 (a person of ordinary skill in the art “is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.”).

For the above reasons, the Court construes the claim term “minimum power threshold” to mean “a minimum amount of power a load must use during an associated time interval.”

IV. CONCLUSION

The Court will construe the disputed claim terms as described above. The Court will issue an Order consistent with this Memorandum Opinion.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E.
CLINE, JR.,

Defendants.

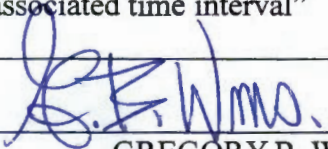
C.A. No. 21-534-GBW

ORDER

At Wilmington this 28th day of October 2022:

For the reasons set forth in the Memorandum Opinion issued this day, IT IS HEREBY ORDERED that the Court construes the following claim terms of United States Patent No. 10,608,433 (the “433 patent”) as follows:

<u>Claim Term</u>	<u>Court’s Construction</u>
<u>Disputed Constructions</u>	
“power option agreement”	“an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the time interval unless the power entity exercises the option”
“minimum power threshold”	“a minimum amount of power a load must use during an associated time interval”


 GREGORY B. WILLIAMS
 UNITED STATES DISTRICT JUDGE

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BEARBOX LLC AND AUSTIN STORMS)	
)	
Plaintiffs,)	
)	
v.)	C.A. No. 21-534- GBW-CJB
)	
LANCIUM LLC, MICHAEL T.)	
MCNAMARA, and RAYMOND E. CLINE, JR.)	
)	
Defendants.)	
)	

**DEFENDANTS’ MOTION FOR BIFURCATION AND
TO EXPEDITE BRIEFING AND CONSIDERATION OF THIS MOTION**

Defendants Lancium LLC, Michael T. McNamara, and Raymond E. Cline Jr., (“Defendants”) move to bifurcate the trial in this matter whereby the Court will first hold a bench trial on the claims of sole inventorship (Count I) and joint inventorship (Count II) followed by a jury trial on the conversion claim (Count V). The reasons for this motion are set forth in Defendants’ Opening Brief, filed herewith.

Because the pretrial conference is scheduled for November 22, 2022 and trial is set to begin on December 5, 2022, just weeks away, Defendants seek expedited consideration of this motion. Defendants’ propose a briefing schedule where Bearbox LLC and Austin Storms (“Plaintiffs”) answering brief is due on November 7, 2022 and Defendants’ reply brief is due on November 11, 2022.

The Court may recall that Plaintiffs indicated they opposed bifurcation during the October 20, 2022 hearing. Oct. 20, 2022 Hr’g Tr. at 44:2-12 & 45:11-22. Defendants understand that Plaintiffs still oppose this motion.

Dated: October 31, 2022

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E. CLINE,
JR.

Defendants.

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C.A. No. 21-534-GBW-CJB

[PROPOSED] ORDER GRANTING DEFENDANTS' MOTION FOR BIFURCATION

Having read and considered Defendants Lancium LLC, Michael T. McNamara and Raymond E. Cline's ("Defendants") Motion for Bifurcation (the "Motion") and Plaintiffs' Opposition to the Motion, and all parties having received due notice and an opportunity to be heard,

IT IS HEREBY ORDERED THAT:

1. The Motion is GRANTED. To the extent claims remain after the Court's ruling on the Parties' summary judgment briefing, the Court will first hold a bench trial on the claims of sole inventorship (Count I) and joint inventorship (Count II) followed by a jury trial on the conversion claim (Count V).

IT IS SO ORDERED.

Dated: _____, 2022

The Honorable Gregory B. Williams
United States District Judge

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E. CLINE,
JR.

Defendants.

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C.A. No. 21-534-GBW-CJB

FILED UNDER SEAL

**DEFENDANTS' OPENING BRIEF IN SUPPORT OF THEIR
MOTION FOR BIFURCATION**

Dated: October 31, 2022

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INTRODUCTION

“[Bearbox’s] conversion claim is based on the theft of material that is *not* included in the ’433 Patent, and therefore does *not* seek ‘patent-like’ relief, or turn on questions of patent inventorship or ownership.” – Plaintiffs’ Brief In Opposition to Defendants’ First Motion For Summary Judgment (D.I. 176), at 34 (emphasis original)

A court may order separate trials on one or more issues for convenience, to avoid prejudice, or to expedite and economize. Fed. R. Civ. P. 42(b). Plaintiffs BearBox LLC and Austin Storms (collectively “Plaintiffs”) originally asserted six causes of action of which three remain—sole inventorship (Count I), joint inventorship (Count II), and conversion (Count V). Plaintiffs admit their patent inventorship claims (Counts I and II) are different than their conversion claim. Defendants Lancium LLC, Michael T. McNamara, and Raymond E. Cline, Jr. (collectively, “Lancium”) request this Court take Plaintiffs at their word and bifurcate the patent inventorship claims from the conversion claim, first conducting a bench trial on the patent inventorship claims, and then holding a jury trial on the conversion claim. As demonstrated below, bifurcation is appropriate here because it will (i) enhance juror comprehension of the issues, (ii) avoid prejudice, and (iii) promote convenience and economy by having the Court decide the more complex patent inventorship issues, while the jury decides the more straightforward conversion state law claim. In sum, bifurcation is most likely to result in a just, final disposition of the litigation by eliminating substantial risk of jury confusion and prejudice. *See Ciena Corp. v. Corvis Corp.*, 210 F.R.D. 519, 520 (D. Del. 2002); *see also Audio MPEG, Inc. v. Dell Inc.*, 254 F. Supp. 3d 798, 803-04 (E.D. Va. 2017).

FACTUAL BACKGROUND

Plaintiffs allege that Austin Storms should be declared to be the sole inventor (or, alternatively, at least a joint inventor) of U.S. Patent No. 10,608,433 (“the ’433 patent”). Plaintiffs

seek no monetary relief for these claims. If tried,¹ resolution of these claims will require, among other things, consideration of the '433 patent, its claims, the Court's construction of those claims, Plaintiffs' "evidence," including a conversation during a dinner attended by approximately eight persons that occurred immediately following a cocktail hour where Messrs. Storms and McNamara allegedly met for the first time, a handful of ensuing text messages between the two men, and a single email with five attachments, four of which Plaintiffs concede were made publicly available. *See* Lancium's Brief in Support of its Motion for Summary Judgment ("MSJ Motion") (D.I. 149) (and exhibits cited therein), at 35; Lancium's Reply Brief in Support of Motion for Summary Judgment ("MSJ Reply") (D.I. 195), at 20 (and exhibits cited therein)). It is expected that Plaintiffs will also rely on source code Plaintiffs contend demonstrates that Mr. Storms had "conceived" of the inventions of the '433 patent at the time he communicated with Mr. McNamara.² In addition, resolution will require consideration of Lancium's evidence of its independent technology development, including its conception of the subject matter claimed in the '433 patent.

Plaintiffs' conversion allegation is narrower. Plaintiffs assert a Louisiana state law claim for conversion of a "breakeven arbitrage" method allegedly described in a spreadsheet and a drawing that were attached to Mr. Storms' May 9, 2019 email to Mr. McNamara. *See, e.g.* MSJ Reply, at 20, n. 13, citing Ex. 33 (Plaintiffs' expert, Dr. McClellan), at 96:6-97:19. The drawing was made public numerous times, including being posted on BearBox's Twitter. *See* MSJ Reply, at 20 (Ex. 40 thereto). Versions of the allegedly confidential information in the spreadsheet were, likewise, provided to third parties. *Id.* (and exhibits cited therein). Plaintiffs seek millions of

¹ Lancium maintains summary judgment on Plaintiffs' inventorship claims is appropriate for the reasons identified in its Motion for Summary Judgment. (*See* D.I. 148, 195).

² It is undisputed that Mr. Storms never provided his source code to Mr. McNamara.

dollars in damages for Lancium’s alleged conversion. If tried,³ resolving the conversion issue will involve evidence of the origins of Plaintiffs’ so-called “breakeven arbitrage” method, whether Plaintiff made it public, whether he communicated it to Lancium, whether such communication was voluntary, whether Lancium used Plaintiffs’ method, Lancium’s development of its own technology, a comparison of Lancium’s and Plaintiffs’ technologies, and damages issues and related witnesses.

ARGUMENT

I. The Court Should Bifurcate The Patent Inventorship Claims From The Conversion Claims.

A. Applicable Legal Principles

“[A] district court has broad discretion in separating issues and claims for trial as part of its wide discretion in trial management.” Fed. R. Civ. P. 42(b); *Ciena Corp.*, at 520 (internal quotation marks omitted). To determine whether to bifurcate, Courts “should consider whether bifurcation will avoid prejudice, conserve judicial resources, and enhance juror comprehension of the issues presented in the case.” *Id*; *see also Lab. Skin Care, Inc. v. Ltd. Brands, Inc.*, 757 F. Supp. 2d 431, 442 (D. Del. 2010) (granting bifurcation in a patent case where, among other things, bifurcation would reduce “risk of juror confusion”). “In the context of patent cases, experienced judges use bifurcation and trifurcation both to simplify the issues [] and to maintain manageability of the volume and complexity of the evidence presented to a jury.” *Ciena Corp.*, 201 F.R.D. at 521; *Audio MPEG*, 254 F. Supp.3d at 803 (same). “[B]ifurcation of complex patent trials has become common.” *Ciena Corp.*, 201 F.R.D. at 521.

³ Lancium also maintains summary judgment is proper on Plaintiffs’ conversion claim for the reasons set forth in its MSJ Motion and MSJ Reply. (D.I. 148, 195).

B. Bifurcation Is Appropriate In This Case.

The major consideration in deciding whether to bifurcate is whether bifurcation will result in a just final disposition of the litigation. *Audio MPEG*, 254 F. Supp.3d at 806. Here, bifurcating the patent inventorship claims from the conversion claim and trying the patent inventorship issues to the bench, will help ensure a just final disposition because doing so will: (1) enhance juror comprehension, (2) avoid prejudice by ensuring the jury does not conflate the evidence relating to the patent inventorship allegations with those relating to the conversion allegation, and (3) simplify both trials.

1. Bifurcation will enhance juror comprehension.

Bifurcation will enhance juror comprehension (*i.e.*, help avoid juror confusion) with respect to the applicable legal principles, the burdens of proof, and the comprehension of the relevant evidence.

First, bifurcation will enhance juror comprehension with respect to the applicable legal standards. As one Court in this District has stated, in complicated patent cases, it is best to conduct a trial “in a way that reduces the number of legal principles the jury must consider and apply.” *Ciena Corp.*, 210 F.R.D. at 521; *AudiMPEG*, 254 F. Supp. 3d at 807 (finding bifurcation enhanced jury decision making by, among other things, “limiting the number of legal issues the jury must address at any particular time”). Here, a jury is well-equipped to decide the simple question of whether Lancium converted information Plaintiffs voluntarily sent to Mr. McNamara in a single email. Generally, the jury will be asked to decide if Defendants acted in derogation of the Plaintiffs’ possessory rights and wrongfully exercised or assumed authority over Plaintiffs’ goods, thereby depriving Plaintiffs of possession of those goods either permanently or indefinitely. *Quealy v. Paine, Webber, Jackson & Curtis, Inc.*, 475 So. 2d 756,760 (La. 1985) (emphasis added); *see also Dileo v. Horn*, 189 So. 3d 1189, 1198 (La. Ct. App. 5 Cir. 2016).

The inventorship determination, on the other hand, involves different, and more numerous legal requirements. To begin, inventorship is a question of law. *Eli Lilly and Co. v. Arandigm Corp.*, 376 F.3d 1352, 1362 (Fed. Cir. 2004). The analysis first requires construction of each disputed claim term (*Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n*, 383 F.3d 1352, 1381-82 (Fed. Cir. 2004)). This Court issued its claim construction ruling on October 28, 2022. D.I. 218-219. To succeed on their sole inventorship claim, Plaintiffs must establish that “(1) the erroneously omitted inventor conceived [each of] the invention[s] claimed in the patent, and (2) the named inventor[s] on the patent did *not* conceive the invention[s].” *Iceotope Grp. Ltd. Liquid Cool Sols., Inc.*, No. 20-CV-2644, 2022 WL 204923, at 2 (D. Min. Jan. 24, 2022) (emphasis original). This analysis involves application of the claim construction to a myriad of technical issues regarding Mr. Storms’ “technology” to determine whether he “conceived”⁴ each of the 20 claims). In addition, the sole inventorship analysis requires consideration of what Mr. Storms communicated to Lancium, and involves analyzing Lancium’s technology development and timeline to determine whether Messrs. McNamara and Cline did *not* conceive the inventions claimed in the ’433 patent. *See* D.I. 149, at 24-25 (Defendants’ MSJ explaining legal principles). The joint inventorship analysis involves determining whether Mr. Storms made a contribution “not insignificant in quality, when that contribution is measured against the dimension of the full invention,” as opposed to merely explaining well-known concepts and/or the state of the art to the real inventors. *See* D.I. 149, at 24-25 (Defendants’ MSJ explaining legal principles). It also involves determining what Mr. Storms communicated to Mr. McNamara, analyzing Lancium’s technology development and timeline to determine whether Messrs. McNamara and Cline

⁴ Conception is “the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention.” *See Gemstar*, 383 F.3d at 1381.

conceived the claimed technology, and determining whether there was any collaboration between Mr. Storms and Messrs. McNamara and Cline for the invention. Moreover, both inventorship claims involve issues of corroboration and, ultimately, application of the rule of reason analysis. *See* D.I. 149, at 9-11, 30; D.I. 195, at 15-17. The conversion analysis does not implicate these legal requirements.

Second, bifurcation will enhance juror comprehension with respect to the burdens of proof. As discussed in connection with Lancium's Motion for Summary Judgment, patent issuance creates a presumption that the named inventors are the true and only inventors, and that people not named are not to be inventors. *Scott v. Zimmer*, 889 F. Supp. 2d 657, 662 (D. Del. 2012). Plaintiffs seeking to add Mr. Storms as an inventor, therefore, must meet "the heavy burden of proving [their] case by clear and convincing evidence." *Id.* But the standard for conversion is preponderance of the evidence. Trying the patent inventorship claims and the conversion claim together to a jury increases the likelihood of juror confusion regarding the respective burdens of proof and, ultimately, of the jury misapplying the respective burdens of proof.

Third, bifurcation will enhance juror comprehension of the evidence. To decide the inventorship claims, a jury will be asked to decipher the testimony of Mr. Storms, both parties' technical experts, source code issues, and the application of the claim construction to the respective parties' technology. Conversely, to decide conversion, the jury will be asked to decide issues of public availability/confidentiality, whether Mr. Storms voluntarily provided the allegedly converted information, and whether Lancium converted such information. However, based on the manner in which Plaintiffs appear to be presenting the evidence, the jurors' job would be further complicated because Plaintiffs' technical expert, Dr. McClellan, conflates the inventorship subject matter with the conversion subject matter in his report. *See, e.g.,* Expert Report of Dr. Stan

McClellan (D.I. 149, Ex. 3), at ¶ 62 (for claim 1, element c, discussing “comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price conditions”); ¶ 66 (discussing similar analysis for claim 1, element d).⁵ During his deposition, Dr. McClellan testified “the patent doesn’t contemplate selling it [the power] back at all,” and defers to Mr. McCamant regarding the meaning of power option agreement. *See* Ex. 5 to D.I. 149, at 154:24-156:11 (quote is at 155:5-6). For this reason, bifurcation should be granted because it would permit the evidence to be presented in a manner “that is easier for the jurors to understand.” *Audio MPEG*, 254 F. Supp. 3d at 807.

Finally, Plaintiffs are legally precluded from seeking damages for their patent inventorship claims, but are seeking tens of millions for conversion. A jury is likely to be confused when Plaintiffs’ damages expert attempts to (wrongfully) explain why Plaintiffs should receive money for conversion, but nothing for patent inventorship.

2. Bifurcation will reduce the risk of prejudice.

Bifurcation is also warranted because it will reduce the risk of prejudice by reducing the risk of the jury conflating the evidence relating to the patent inventorship claims with the evidence relating to the conversion claims. As discussed above, a focus of the inventorship analysis is whether Mr. Storms conceived of the claimed inventions and communicated them to Mr. McNamara during the public dinner and/or later in text messages or via the single email. Because the materials that form the basis of Plaintiffs’ conversion claim were attachments to Mr. Storms’ email, there will likely be some evidentiary overlap between the evidence regarding inventorship

⁵ Dr. McClellan repeats this analysis for independent claims 17 and 20. *See* D.I. 149 (Ex. 3), at ¶¶ 254-55, 272-73.

and the evidence regarding conversion.⁶ But based on Plaintiffs’ expert Dr. McClellan’s report, he conflates so-called “breakeven” power sell-back determinations, which Lancium understands is the basis for the conversion claim, with power option agreements and minimum power thresholds, which are limitations recited in the ‘433 patent’s claims. As such, if the patent inventorship issues are not bifurcated, the likelihood of juror confusion (discussed above) also creates a significant risk of Lancium being prejudiced by the jury conflating the separate, legally distinct issues and evidence relating to Plaintiffs’ sole and joint inventorship allegations with the issues and evidence relating Plaintiffs’ conversion allegation.

This risk is further heightened here because Plaintiffs repeatedly describe Lancium’s alleged conversion and wrongdoing in highly inflammatory terms (*e.g.*, “stole,” “hatched a plan,” “stolen”).⁷ *See, e.g.*, Second Amended Complaint (D.I. 103), at ¶¶ 4, 41, 50. Bifurcation is, therefore, warranted to minimize the risk of Plaintiffs’ conversion arguments tainting the entire trial. *See Massimo Corp. v. Philips Electronics N. Am. Corp.*, No. 09-80-JFF-MPT, 2010 WL 925864, at *2 (D. Del. Mar. 11, 2010); *Audio MPEG*, 254 F. Supp. 3d at 807 (finding allegations of anticompetitive conspiracies, improper market monopolization, and breach of promises could bias a jury against Plaintiffs when it evaluates the patent infringement claims). Indeed, if the jury is inclined to find for Lancium on conversion and thus award no damages, it could lead the jury to find for Plaintiffs on inventorship to award him something.

⁶ Plaintiffs may argue that evidentiary overlap cuts against bifurcation, but the law is clear that there is “a fundamental difference between *evidence* and *issues*.” *See Guardco Mfg., Inc. v. Herst Lighting Co.*, 820 F.2d 1209, 1213 (Fed. Cir. 1987) (emphasis original) (bifurcating inequitable conduct issue).

⁷ Lancium objects to the use of such pejorative terms as violating at least FRE 401 and 403.

3. Bifurcation will promote convenience and economy.

Bifurcation will promote convenience and economy by simplifying and streamlining the issues and evidence for both trials. For example, because Plaintiffs cannot recover monetary damages for inventorship, the inventorship bench trial will not require testimony from damages experts. Also, the testimony regarding Lancium's business operations will likely be shorter, as will be the technical and power market experts' testimony. Similarly, because the conversion claim appears focused on the spreadsheet attached to Mr. Storm's email, the evidence and testimony presented to the jury will be streamlined to that issue. Thus, while there may be some overlap regarding evidence, bifurcation will greatly simplify both trials and is warranted. *See Audio MPEG*, 254 F. Supp. 3d at 805 (finding convenience factor favored bifurcation of antitrust and misuse claims from patent claims despite some evidentiary overlap); *Gardco*, 820 F.2d at 1213 (bifurcating inequitable conduct from infringement/validity despite some evidentiary overlap).

C. Bifurcation Will Not Deprive Plaintiffs Of Their Right To A Jury Trial.

It is expected that Plaintiffs will argue that bifurcation will deprive them of their Seventh Amendment right to a jury trial. *See, e.g., Shum v. Intel Corp.*, 499 F.3d 1272 (2007) (remanding district court's decision to bifurcate inventorship claim and fraud claim because doing so deprived Plaintiff right to jury trial on the fraud claims). In *Shum*, Plaintiff's inventorship and fraud claims were "inextricably intertwined" because Shum's fraud claim was based, in part, on his assertion of misrepresentations by Verdiell (the named inventor) to the patent office and to third parties that Verdiell was the sole inventor. *Id.* at 1277-78. To prove his fraud claim, Shum would have to establish that Verdiell was not the sole inventor, a claim the court found would be eviscerated if Verdiell, not Shum, had invented the claimed technology. *Id.* The *Shum* court distinguished bifurcation cases involving inequitable conduct noting that "while inequitable conduct and validity questions 'overlap in the consideration of some aspects of the same relevant evidence, they do not

involve a common issue.’” *Shum*, at 1270 (distinguishing *Afga Corp. v. Creo Prods Inc.*, 451 F.3d 1366, 1372 (Fed. Cir. 2006)).

The *Shum* case is readily distinguished from the present case. Here, Plaintiffs admit there is no common issue: “[Bearbox’s] conversion claim is based on the theft of material that is not included in the ’433 Patent, and therefore does not seek ‘patent-like’ relief, or turn on questions of patent inventorship or ownership.” See D.I. 176, at 34; See also Plaintiffs’ Brief in Opposition to Defendants’ Motion for Judgment on the Pleadings (D.I. 42), at 5 (“The tort of conversion is accordingly directed to *ownership* of property, not *inventorship*.”) (emphasis original). This case, therefore, is similar to *Afga*, *Gardco*, *Ciena*, and *Audio MPEG*, among others, where, despite some overlap in evidentiary issues, the court exercised its discretion to bifurcate patent infringement/validity issues from inequitable conducts, antitrust, or other issues because doing so enhanced juror comprehension of the issues, avoided prejudice, and promoted convenience and economy.

CONCLUSION

For the reasons set forth above, the Court should bifurcate the patent inventorship claims from the conversion claim and try the inventorship claims to the bench followed by the conversion claim to the jury.

Dated: October 31, 2022

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McNamara, and Raymond E. Cline Jr.*

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BEARBOX LLC and AUSTIN STORMS,)	
)	
Plaintiffs,)	
)	
v.)	C.A. No. 21-534-MN
)	
LANCIUM LLC, MICHAEL T.)	
MCNAMARA, and RAYMOND E. CLINE,)	
JR.)	
)	
Defendants.)	

CERTIFICATE OF SERVICE

I certify that on October 31, 2022, I caused a sealed copy of **Defendants’ Opening Brief In Support of their Motion for Bifurcation** to be served on the following counsel of record by electronic mail.

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,)	CONFIDENTIAL:
)	<u>FILED UNDER SEAL</u>
Plaintiffs,)	
)	
v.)	C.A. No. 21-534-GBW-CJB
)	
LANCIUM LLC, MICHAEL T. MCNAMARA,)	
and RAYMOND E. CLINE, JR.)	
)	
Defendants.)	

**PLAINTIFFS' BRIEF IN OPPOSITION TO
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I. INTRODUCTION

The parties have litigated for months with a Scheduling Order (D.I. 35) that calls for a jury trial. Defendants have not objected to the fact that all claims were scheduled for a jury trial, until now, just weeks before trial. In fact, Defendants filed summary judgment motions attacking all claims with lengthy supporting briefs, which the Court typically would not entertain in advance of a bench trial. If Plaintiffs desired a bench trial on inventorship, they should have sought to bifurcate the trial months ago, avoiding the need for summary judgment briefing on the bench-trial issues, and allowing the parties to consider the bifurcation request before investing resources into preparation for a jury trial.

Plaintiffs remain entitled to a jury trial due to common factual issues raised by their patent inventorship and conversion claims. Even if the Court were to find that Plaintiffs do not have a right to a jury trial on inventorship, the parties should nevertheless present all the evidence to a jury in a single trial. Defendants' proposal, cloaked in "efficiency," would result in the opposite, requiring multiple witnesses to give much of their testimony twice: once in the bench trial and then for the jury. Defendants do not contend (nor can they) that disposition of the inventorship claim may render the conversion claim moot. Conducting two trials (instead of one) would be the opposite of judicial efficiency, particularly if the Court conducted a bench trial first, as Defendants propose.

II. BACKGROUND

The Court entered a Scheduling Order on July 6, 2021, scheduling this case for a jury trial on December 5, 2022. (D.I. 35.) Defendants contacted counsel for Plaintiffs on October 31, 2022 at 12:26 ET indicating they planned to file a motion that day seeking a bifurcated bench trial on inventorship. A few hours later, after waiting months to raise the issue, Defendants filed their Motion for Bifurcation, and in it requested expedited briefing. (D.I. 222, D.I. 223.)

III. ARGUMENT

A. BearBox is entitled to a jury trial on all remaining claims because the factual issues to be decided are substantially common among them

Lancium’s motion is premised on its incorrect contention that “inventorship is a question of law” (D.I. 223 at 5) and its assumption that BearBox is not entitled to a jury trial on the issue of inventorship.

1. Inventorship presents a mixed question of law and fact, which is appropriate for a jury to decide

Although Lancium contends that inventorship is an issue of law, in the case Lancium cites for that proposition (D.I. 223 at 5), the district court tried inventorship to a jury. *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1362 (Fed. Cir. 2004). “Inventorship is a mixed question of law and fact: The overall inventorship determination is a question of law, but it is premised on underlying questions of fact.” *Id.* In *Eli Lilly*, although the Federal Circuit reversed the district court’s denial of judgment as a matter of law, it did not question the district court’s decision to try inventorship to a jury. *Id.* at 1370.

Inventorship presents a mixed question of law and fact just like the defense of obviousness, which is routinely tried to juries. *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1356 (Fed. Cir. 2012) (“[O]bviousness is a mixed question of law and fact . . .”). In *Kinetic Concepts*, the Federal Circuit explained: “[I]t is neither error nor dangerous to justice to submit legal issues to juries, the submission being accompanied by appropriate instructions on the law from the trial judge.” *Id.* at 1358 (quoting *R.R. Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1515 (Fed. Cir. 1984)). By submitting mixed issues of law and fact to a jury, a district court can avoid the “risk of effectively denying the constitutional right” to a jury, while at the same time remaining the “ultimate arbiter” of the legal issues and

exercising a “guardianship role” through proper jury instructions and review of the verdict on a motion for judgment as a matter of law or a new trial. *R.R. Dynamics*, 727 F.2d at 1515.

2. Plaintiffs have a right to a jury trial on all claims with common issues

No amount of judicial efficiency can justify denying a jury trial where a party has a right to one. In deciding whether to try a case to a jury, a district court’s “discretion is very narrowly limited and must, wherever possible, be exercised to preserve jury trial.” *Beacon Theatres, Inc. v. Westover*, 359 U.S. 500, 510 (1959); *see also Dairy Queen, Inc. v. Wood*, 369 U.S. 469, 479 (1962) (finding “the district judge erred in refusing to grant petitioner’s demand for a trial by jury on the factual issues related to the question of whether there has been a breach of contract”). Where an equitable claim presents issues that “are common with those upon which [a] claim to equitable relief is based, the legal claims involved in the action must be determined prior to any final court determination of [the] equitable claims.” *Dairy Queen*, 369 U.S. at 479.

Although Defendants correctly note that Plaintiffs conversion claim is based on misuse of Plaintiffs’ materials containing information that Defendants did not include in the patent-in-suit, there are nevertheless common factual issues between Plaintiffs’ conversion and inventorship claims. The finder of fact will be asked to decide the common issue of whether Mr. Storms communicated anything of value to Defendants or whether he merely communicated documents reflecting prior art methods, as Defendants contend. All of this information was communicated to Defendants at the same time as part of the same oral and written communications. Further, the finder of fact will be asked to decide common issues about how Defendants used Plaintiffs’ documents and information, relying on findings about the same documents and testimony about Defendants’ pursuit of the patent-in-suit and their commercialization and unauthorized use of the converted property. The common issue of whether Mr. Storms contributed anything of value to the Defendants presents intertwined factual issues that the jury should resolve for all claims.

Deciding the issue of inventorship will resolve the common factual question of whether Plaintiffs communicated anything of value to Defendants, an issue that a single fact-finder should decide. *See Shum v. Intel Corp.*, 499 F.3d 1272, 1279 (Fed. Cir. 2007) (reversing district court’s decision to try inventorship before a jury trial on a fraud claim due to “commonality . . . between the factual issues underlying the inventorship and fraud claims”).

Finally, at least two of the cases that Lancium relies on to support its motion simply do not address the right to a jury trial, but instead consider whether cases should be bifurcated for two jury trials, not a bench trial and a jury trial. *Audio MPEG, Inc. v. Dell Inc.*, 254 F. Supp. 3d 798, 809 (E.D. Va. 2017) (bifurcating patent infringement and antitrust claims for two jury trials); *Ciena Corp. v. Corvis Corp.*, 210 F.R.D. 519, 521 (D. Del. 2002) (bifurcating patent infringement trial into multiple phases all to be tried to juries).

B. For the sake of judicial efficiency, all issues should be presented in a single trial to a jury

Even if the Court were to find that BearBox does not have a *right* to a jury trial on its inventorship claims, the Court has discretion to try all issues in a single trial to a jury. Whereas “the right to jury trial is a constitutional one,” “no similar requirement protects trials by the court.” *Beacon Theatres*, 359 U.S. at 510. For example, although the Federal Circuit has held that patent owners do not have a *right* to a jury trial on inequitable conduct, the Federal Circuit has *not* decided “that the factual issues underlying a charge of inequitable conduct *must* be adjudicated by a judge.” *Agfa Corp. v. Creo Prods. Inc.*, 451 F.3d 1366, 1375 (Fed. Cir. 2006) (emphasis added).

1. Bifurcation will require two trials, which is inefficient

Here, judicial efficiency calls for a single trial before a jury. Defendants’ proposed bifurcation makes little sense. Under Defendants’ proposal, the Court would first conduct a

bench trial to be followed by a jury trial requiring testimony from all of the same witnesses who would testify in the bench trial. Defendants do not even contend that the bench trial may somehow obviate the need for the jury trial, making this case different than the inequitable conduct cases the Defendants cite in which district courts first tried the issue of inequitable conduct because a favorable decision for the defendants on that defense would obviate the need for a jury trial about patent infringement. *Agfa*, 451 F.3d at 1371 (affirming district court's decision to try inequitable conduct to the bench, ultimately obviating the need for a jury trial on patent infringement); *Gardco Mfg., Inc. v. Herst Lighting Co.*, 820 F.2d 1209, 1213 (Fed. Cir. 1987) (finding district court "did not abuse its discretion in trying Gardco's inequitable conduct claim first in this case," obviating the need for a jury trial).

Rather than streamline the case in a single trial before a single finder of fact (a jury), the Defendants would call for the Court to conduct two separate trials where all of the witnesses from the first trial would testify again in the second trial, and they would need to repeat much of their testimony for the jury, who would not be present for the first trial. Specifically, Plaintiffs plan to call Mr. Storms and a technical expert, and both of those witnesses will testify about issues related to both inventorship and conversion. Although Plaintiffs also plan to call a damages expert (and possibly a second technical expert) for its conversion case, there is no efficiency to be gained by having those experts testify separately in a second trial. Either way, the Plaintiffs will call their damages expert to testify. By conducting a single trial, however, Mr. Storms and Plaintiffs' technical expert would only need to testify one time.

Moreover, bifurcation may serve to confuse, not streamline the issues, and create frequent and needless issues about the relevance of certain testimony and exhibits. For example, during the jury trial, would Mr. Storms be permitted to tell his whole story about his interactions

with Defendants, or would he be required to restrict that testimony to certain aspects of his communications with Defendants? If he must limit his testimony, this seemingly artificial restriction may confuse the jury and hamper the jury's ability to comprehend all of the facts. In any event, such a restriction would create needless evidentiary disputes about the scope of witness testimony throughout the trial.

2. Defendants cannot support their speculative concerns about a single jury trial

To support their proposal to have two trials, Defendants rely on a litany of speculative concerns about the jury's ability to comprehend patent inventorship or consider different standards of proof. These concerns are nothing but attorney argument questioning the capabilities of juries. As the Court is aware, juries are routinely asked in patent cases to follow the Court's instructions and decide complicated issues, including issues with different standards of proof (for example, infringement and invalidity in patent infringement trials). On the one hand, Defendants contend this is a straightforward case in which Mr. Storms communicated nothing of value to them. On the other hand, Defendants contend that a jury will be unable to process the facts if asked to decide multiple issues. Neither contention is true, but Defendants have submitted no compelling reason that a jury cannot decide all of the issues in a single trial.

Finally, Defendants are wrong to assert they will be prejudiced by a jury trial because the jury will conflate evidence and possibly engage in jury nullification by ignoring the Court's instructions and awarding no damages, but nevertheless finding Mr. Storms to be an inventor. These are purely speculative concerns that could be said about any jury trial. They do not warrant bifurcation in this case.

3. In the alternative, the Court may treat the jury's verdict as advisory

In the event the Court concludes that Plaintiffs do not have a right to a jury trial on their inventorship claims, another option for conserving judicial resources would be to try all the issues to a jury, but treat the jury's verdict as advisory. The Court may treat a verdict as "advisory" in two ways. First, as discussed above, the Court may properly present a mixed issue of law and fact to the jury, while remaining "the ultimate arbiter" of any legal issues by deciding post-trial motions for judgment as a matter of law or for a new trial. *Kinetic Concepts*, 688 F.3d at 1359. Or second, the Court may treat the jury's verdict as entirely advisory under Federal Rule of Civil Procedure 39(c)(1) and ultimately decide the inventorship claims in view of the jury's advisory verdict only after receiving proposed conclusions of law and findings of fact from the parties. *Id.* at 1357. Under either approach, the Court would realize judicial efficiencies by conducting only a single trial.

IV. CONCLUSION

For the foregoing reasons, the Court should deny Defendants' Motion for Bifurcation and try all of the issues in this case in a single trial before a jury.

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Dated: November 10, 2022

CERTIFICATE OF SERVICE

I hereby certify that on the 10th day of November, 2022, the attached **PLAINTIFFS' BRIEF IN OPPOSITION TO DEFENDANTS' MOTION FOR BIFURCATION** was served upon the below-named counsel of record at the address and in the manner indicated:

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From: ded_nefreply@ded.uscourts.gov
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Subject: Activity in Case 1:21-cv-00534-GBW-CJB BearBox LLC et al v. Lancium LLC et al Order

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U.S. District Court

District of Delaware

Notice of Electronic Filing

The following transaction was entered on 11/14/2022 at 3:17 PM EST and filed on 11/14/2022

Case Name: BearBox LLC et al v. Lancium LLC et al

Case Number: [1:21-cv-00534-GBW-CJB](#)

Filer:

Document Number: 232(No document attached)

Docket Text:

ORAL ORDER: Having determined that the only issue remaining for the Court to hear is Plaintiffs' claims of sole inventorship, or, alternatively, joint inventorship (D.I. 231), and since inventorship is an issue solely for the Court to determine, see, e.g., 35 U.S.C. § 256; Shum v. Intel Corp., 499 F.3d 1272, 1277 (Fed. Cir. 2007) (holding that "an action for correction of inventorship under § 256, standing alone, is an equitable claim to which no right to a jury trial attaches"), IT IS HEREBY ORDERED that the 4-day jury trial scheduled to begin on December 5, 2022 (D.I. 35 at 15) is now scheduled as a 3-day bench trial beginning on Tuesday, December 6, 2022. The pretrial conference will be held on November 22, 2022, to begin at 3:00 PM (rather than at 4:30 PM). ORDERED by Judge Gregory B. Williams on 11/14/22. (ntl)

1:21-cv-00534-GBW-CJB Notice has been electronically mailed to:

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1:21-cv-00534-GBW-CJB Filer will deliver document by other means to:

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BEARBOX LLC and AUSTIN STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA, and RAYMOND E. CLINE,
JR.

Defendants.

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C.A. No. 21-534-GBW-CJB

FILED UNDER SEAL

**DEFENDANTS' OPENING LETTER BRIEF IN SUPPORT OF ITS EMERGENCY
MOTION TO STRIKE PLAINTIFFS' NEWLY DISCLOSED, UNTIMELY EXPERT
REPORT AND REQUEST FOR EXPEDITED BRIEFING**

On November 11, 2022, in the latest example of Plaintiffs substantially changing their theories and claims when faced with an adverse ruling or evidence, Plaintiffs served a supplemental report by their expert, Dr. McClellan, offering new opinions and analysis. Faced with Defendants' Motion *in Limine* No. 1 and the Court's rejection of Plaintiffs' asserted "plain and ordinary" meaning of the claim terms "power option agreement" and "minimum power threshold," Dr. McClellan's supplemental report, served without even seeking leave of the Court or any discussion with Defendants, is an improper, highly prejudicial, last minute attempt to bolster Plaintiffs' claims for correction of inventorship. Plaintiffs' asserted justification for the supplemental report—that Dr. McClellan should be allowed "to apply the language of the Court's claim construction"—is both meritless and inconsistent with their prior representation to the Court that "even under sort of the tortured proposed construction ... that defendants have proposed, Dr. McClellan's analysis holds." Defendants' MIL 1, Ex. 1 (10/20/2022 Hr'g Tr.) at 31:6-15. Dr. McClellan could and should have analyzed and addressed the proper meaning of the claims in his previous reports but chose not to. Good cause, therefore, does not exist for this supplementation. To the contrary, the *Pennypack* factors strongly weigh in favor of striking Dr. McClellan's new opinions and analysis. The Court should strike Dr. McClellan's supplemental report and the opinions and analysis therein.

As an initial matter, Dr. McClellan's supplemental expert report (attached as Ex. 1) is untimely. Opening expert reports on issues for which a party bears the burden of proof, were due on April 5, 2022, rebuttals to those reports were then due on May 6, 2022, reply reports in support of an expert's opening reports were due on May 20, 2022, and expert discovery closed on June 6, 2022. *See* D.I. 109 (Stipulated Order); 3/3/22 Minute Entry adopting D.I. 109. Dr. McClellan's supplemental report, however, was not served until November 11, 2022 (and even then not until well after the Court's 5:00 pm service deadline to be deemed served that day). Ex. 2 (11/11/22 J. Labbe email serving McClellan Supplemental Report). Thus, Dr. McClellan's supplemental report is untimely and should be stricken. *See Praxair, Inc. v. ATMI, Inc.*, 231 F.R.D. 457, 463-64 (D. Del. 2005), *reversed on other grounds by Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306 (Fed. Cir. 2008) (granting motion to strike and excluding supplemental expert report filed after the close of expert discovery where trial was set to begin in less than a month); *Masimo Corp. v. Philips Elec. North Am. Corp.*, No. 09-80, 2013 WL 2178047, at (D. Del. May 20, 2013) (recommending striking untimely supplemental expert report), recommendation adopted by *Masimo Corp. v. Philips Elec. North Am. Corp.*, 62 F. Supp. 3d 368, 388-389 (D. Del. 2014); *INVISTA North America S.a.r.l. v. M&G USA Corp.*, No. 11-1007, 2013 WL 3216109, at *3-4 (D. Del. June 25, 2013) (striking new opinions in expert declaration served during summary judgment briefing).

Plaintiffs' purported excuse for Dr. McClellan's untimely report rings hollow. When considering a motion to strike untimely expert opinions, courts consider the "validity of the excuse offered by the party" seeking to introduce the new opinions. *See Praxair*, 231 F.R.D. at 463. Here, Plaintiffs contend that Dr. McClellan's supplemental report should be permitted because he allegedly could not have addressed the Court's claim constructions in his previous reports. Not so. Plaintiffs' argument ignores that Dr. McClellan's opening report purports to apply the "plain and ordinary meaning" of all of the '433 patent's claim terms. *See* D.I. 151, Ex. 3 at ¶ 49. It is well-established that this "plain and ordinary meaning" is the meaning a term would have to a person of ordinary skill in the art after reviewing the intrinsic record at the time of the invention." *O2 Micro*, 521 F.3d at 1360 (citing *Philips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005)); *see also AstraZeneca AB v. Mylan Pharm. Inc.*, 19 F.4th 1325, 1330 (Fed. Cir. 2021) ("[A]s we have explained, the ordinary meaning of a claim term is not the meaning of the term in the abstract.

... Instead, the ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent.” (internal citations and quotations omitted)); *Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1321 (Fed. Cir. 2016), quoting *Trustees of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1363 (Fed. Cir. 2016) (“[T]he question is not whether there is a settled ordinary meaning of the terms in some abstract sense of the words. Rather, as we recently explained, ‘The only meaning that matters in claim construction is the meaning in the context of the patent.’”). Nonetheless, in his opening report Dr. McClellan did not provide any analysis of the purported “plain and ordinary meaning” of any claim terms in view of the intrinsic record.¹

Dr. McClellan also could (and should) have provided his newly minted opinions back in May 2022 in reply to Dr. Ehsani’s report. Unlike Dr. McClellan’s opening report, Dr. Ehsani’s rebuttal report did include an analysis of the meaning of “power option agreement” and “minimum power thresholds” and applied that meaning to his opinions regarding inventorship. *See, e.g.*, Defendants’ MIL 1, Ex. 3 (Ehsani Report) at ¶¶ 42-43, 107, 109, 116-117. That analysis was consistent with the Court’s construction. Thus, at the very least, Dr. McClellan could and should have responded to those opinions and interpretation of the asserted claims in his reply report. Plaintiffs and Dr. McClellan, in fact, had an obligation to address Dr. Ehsani’s interpretation of the claim terms—the same interpretation the Court adopted—in Dr. McClellan’s reply report. *See, e.g., St. Clair Intellectual Prop. Consultants, Inc. v. Matshushita Elec. Indus. Co., Ltd.*, No. 04-1436, 2012 WL 1015993, at *5 (D. Del. Mar. 26, 2012) (“When claim construction remains an open issue at the time the parties serve expert reports ... the parties have an obligation ‘to prepare for the fact that the court may adopt [the other party’s claim] construction.’” (quoting *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 270 F. Supp. 2d 519, 524 (D. Del. 2003))); *iCeutica Pty Ltd v. Novitium Pharma LLC*, No. 18-99, 2019 WL 4604029, at *2 (D. Del. Sept. 23, 2019) (similar). And Dr. McClellan even noted the dispute in his reply report, stating that “Dr. Ehsani alleges that I fundamentally misunderstand the claim” language and meaning. *See* D.I. 151, Ex. 4 at ¶ 86. But rather than address Dr. Ehsani’s analysis and opinions, Dr. McClellan simply asserted in conclusory fashion that “I have applied the plain and ordinary meaning of the claim terms.” D.I. 151, Ex. 4 at ¶ 8. Accordingly, the Court should not permit Dr. Ehsani to now provide the opinions and analysis that he chose not to provide during expert discovery.

The *Pennypack* factors also strongly weigh against permitting Dr. McClellan’s supplemental report. *See Praxair*, 231 F.R.D. at 463 (striking supplemental expert report based on analysis of *Pennypack* factors). First, the prejudice and surprise to Defendants is substantial. Indeed, Defendants had no opportunity to depose Dr. McClellan regarding his new opinions or have their own experts respond during expert discovery, and now have no opportunity to pursue summary judgment or a *Daubert* motion based on these new opinions. Defendants prepared their case based on the opinions Dr. McClellan originally offered. And although Plaintiffs have represented that they are “open to discussing a schedule for [Defendant’s] expert to respond to this supplement, should he wish to do so,” this vague offer would only compound the prejudice to Defendants. *See* Ex. 3 (11/11/22 B. Horton email). Defendants and Dr. Ehsani should not be forced

¹ To the extent that Plaintiffs contend that Dr. McClellan’s supplemental report should be allowed because he had a duty to supplement his opinions under Fed. R. Civ. P. 26(e) (*see* Ex. 3), this too is wrong. “The duty to supplement or correct pursuant to Rule 26(e) is not for the benefit of the party who has the duty.” *Lockhart v. Willingboro High School*, No. 14-3701, 2017 WL 11465996, at *3 (D.N.J. May 3, 2017) (striking supplemental expert report) (quotations and citations omitted); *see also INVISTA*, 2013 WL 3216109, at *1 (similar).

to devote substantial time to preparing a supplemental rebuttal report with only 3 weeks left before trial. Likewise, although Plaintiffs have not offered to make Dr. McClellan available for deposition before trial, the need to prepare for and take such a deposition in the scant time before trial is also unduly prejudicial. *Id.* (finding prejudice due to supplemental expert report where opposing party had “no opportunity conduct rebuttal discovery”); *INVISTA*, 2013 WL 3216109, at *3 (“To allow these new expert opinions, in the middle of summary judgment briefing and just prior to trial, would unduly prejudice Invista.”); *Reckitt Benckiser Inc. v. Tris. Pharma, Inc.*, No. 09-3125, 2011 WL 6722707, at *7 (D.N.J. Dec. 21, 2011) (striking supplemental expert report and finding prejudice due to “the resources which have expended [by defendant] in preparing this case in reliance on the expert reports that were initially served”).

Second, there is no way to cure the prejudice to Defendants, and allowing Dr. McClellan to offer his new opinions at trial would disrupt the trial process. As addressed above, permitting Defendants to depose Dr. McClellan and/or serve their own new rebuttal expert reports before trial is prejudicial to Defendants’ other trial preparation efforts, and delaying trial is prejudicial to Defendants’ right to the prompt resolution of the Plaintiffs’ lingering claims. *See Praxair*, 231 F.R.D. at 463-464 (noting that allowing “additional expert discovery” to address prejudice due to supplemental expert report “would undoubtedly disrupt the trial process, as trial is set to begin in less than a month”); *Reckitt Benckiser*, 2011 WL 6722707, at *7 (prejudice due to supplemental expert report “could not be cured in time for the agreed upon trial date” which “was scheduled to begin ... approximately a month after oral argument” on motion to strike).

In addition, Dr. McClellan’s supplemental report continues to offer opinions that are inconsistent with the Court’s claim construction rulings, and thus perpetuates the prejudice to Defendants caused by these improper opinions. For example, although the Court noted that “[t]he specification is further replete with examples supporting Lancium’s assertion that any construction of ‘power option agreement’ necessarily requires the load to ‘use’ or ‘consume’ at least the amount of power subject to the option (e.g., the minimum power threshold)” (D.I. 218 at 10), Dr. McClellan’s supplemental report continues to assert his opinion that “[w]hether I use that power to do something with or whether I sell that power to somebody else, that’s separate from the power option agreement.” *See* Ex. 1 at 3-4.

Finally, Plaintiffs’ providing a supplemental report from Dr. McClellan weeks after the Court’s claim construction ruling, after previously representing to the Court that “even under sort of the tortured proposed construction ... that defendants have proposed, Dr. McClellan’s analysis holds,” supports a finding of bad faith. Defendants’ MIL 1, Ex. 1 (10/20/2022 Hr’g Tr.) at 31:6-15. Likewise, Plaintiffs’ history of changing their allegations and theories in response to adverse rulings and evidence also supports a finding of bad faith. *See, e.g.*, D.I. 19 (Amended Complaint changing claims 12 days after Defendants filed their Answer, D.I. 18); D.I. 103 (Second Amended Complaint asserting new claims and theories after the Court dismissed all of Plaintiffs’ state law claims); 4/22/22 Minute Entry (striking Plaintiffs’ improperly re-asserted trade secret misappropriation claims). Nonetheless, bad faith is not necessary to strike the report. *Reckitt Benckiser*, 2011 WL 6722707, at *8 (striking supplemental expert report “without an express finding that Plaintiffs acted in bad faith”); *Lockhart*, 2017 WL 11465996, at *6; *see also Praxair*, 231 F.R.D. at 463-464 (striking supplemental expert report without finding bad faith).

The Court should strike Dr. McClellan’s supplemental report and opinions.

Dated: November 15, 2022

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Exhibit 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC AND AUSTIN
STORMS,

Plaintiffs,

v.

LANCIUM LLC, MICHAEL T.
MCNAMARA,

AND RAYMOND E. CLINE, JR.,

Defendants.

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C.A. No. 21-534-GBW-CJB

Supplement to Expert Reports of Dr. Stan McClellan

November 11, 2022

(SOURCE CODE – OUTSIDE ATTORNEYS EYES ONLY –
RESTRICTED HIGHLY CONFIDENTIAL)

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RESTRICTED HIGHLYCONFIDENTIAL

I. INTRODUCTION

[1] I previously submitted expert reports, dated April 5, 2022 (“Original Report”) and May 20, 2022 (“Reply Report”), for the above referenced matter. Those opinions have not changed. This Supplement provides clarification regarding conception of certain intellectual property by Mr. Storms, the communication of his ideas to Defendants (“Lancium”) in light of the Court’s Markman Order dated October 28, 2022 (“Markman Order”). I reserved the right to provide this Supplement should the Court construe any terms after I provided my Reports.

[2] As noted in my Original Report and Reply Report, it is my understanding that Bearbox seeks to correct inventorship of U.S. Patent No. 10,608,433 (hereinafter referred to as “the ’433 patent”). My Original Report provides an analysis showing (1) Plaintiffs’ conception and possession of the technologies recited in the claims of the ’433 patent and/or other power arbitrage methods prior to their meetings with Lancium; (2) Plaintiffs provided an enabling description of this information to Lancium; and (3) Lancium’s product offerings, such as its Smart Response service, use the technologies recited in the Asserted Claims. This Supplement reiterates and clarifies some of my earlier analysis in my Original Report and Reply Report in consideration of the Markman Order.

II. NEW INFORMATION CONSIDERED

[3] Since the dates of my Original Report and Reply Report, the Court issued the Markman Order setting forth explicit constructions for the plain and ordinary meaning of the terms “power option agreement” and “minimum power threshold.”

[4] Specifically, the Court construed the term “power option agreement” to mean “an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the interval unless the power entity exercises the option.” Dkt. No. 218 at 7. The Court also construed the term “minimum power

threshold” to mean “a minimum amount of power a load must use during an associated time interval.” *Id.* at 16.

[5] The Court’s constructions of these terms do not change my opinions about Mr. Storms’s conception and communication of his proprietary information to Lancium set forth in my earlier reports. Although I did not apply the Court’s construction in my earlier reports, my opinions apply with equal weight under the Court’s constructions, as I further explain below.

[6] Although I did not expressly apply these claim constructions in my earlier reports, my understanding of these claims terms is consistent with the Court’s interpretation. This is evidenced in part by my deposition testimony below:

5 Q: What's your understanding of the
6 plain and ordinary meaning of power option agreement?
7 A: My understanding of **power option agreement is**
8 **it's essentially a contract to buy power at a certain**
9 **price. It's like a wholesale purchase.** I'm going to buy
10 X number of units at X price.
11 Q: What's your understanding of **power option data**?
12 A: **Power option data is the data that's associated**
13 **with the power option agreement.**
14 Q: What -- is there any specific data that's
15 required to be power option data, or can it be anything?
16 A: **I think at least it has intervals and minimum**
17 **thresholds.** There may be other data that's associated
18 with that, but I think there's thresholds over intervals.
19 Q: And intervals are intervals of time?
20 A: Time intervals, yeah.
21 Q: **And what are thresholds?**
22 A: You agree to buy power at that -- **you agree to**
23 **consume that much power at a certain price at that time.**
24 Q **You agree to buy that much power or consume**
1 **that much power?**
2 A: Typically it's consume because you're a load
3 that's not controllable. **If you're a controllable load,**
4 **then you're buying that power with the assumption that**
5 **you're going to consume it.** If you have ability to sell
6 it back, then you can sell it back. But you don't sell
7 it back to whoever you bought it from, you sell it into a
8 market at that time. **It's an agreement with the seller**
9 **to consume, right?**
10 And consume doesn't mean use. Consume means

11 purchase. **Whether I use that power to do something with**
12 **or whether I sell that power to somebody else, that's**
13 **separate from the power option agreement.**

14 Q: What's your understanding of a minimum power
15 threshold in this case as used in the '433 patent?

16 A: That's the data that's associated with the
17 option agreement.

18 Q: **What specifically is a minimum power threshold?**

19 A: **That's the amount of power that you're**
20 **contracted to consume.**

21 Q: And by consume you don't mean use, correct?

22 A: I may not use it, but I'm going to consume it.

23 I'm purchasing it. Whether I use it or whether I sell
24 it, that's a completely separate issue. I'm agreeing to
1 purchase it at that threshold¹

[7] As my testimony shows, I understand the plain and ordinary meaning of the term “power option agreement” to be “an agreement with the seller to consume” an amount of power delivered to the load by a power entity that includes time intervals and “minimum power thresholds,” which I understand to be “the amount you’re contracted to consume” for that time interval. *Id.* These understandings are consistent with and nearly identical to the Court’s interpretation of those terms in the Markman Order, and I may offer testimony at trial based on these opinions.

[8] As my deposition testimony cited above demonstrates, I was referring to my understanding of power option agreements in practice, specifically that if the grid exercises the option to reduce power delivery to the load, the load stops “using” that power as it is contractually obligated to do, but the load may be free to liquidate that unused power into the market through its QSE (e.g. sell it).

[9] During my deposition, it seemed to me that Defendants’ counsel was attempting to attribute a particular type of consumption to the word “use,” such as “use” being limited to “use to mine cryptocurrency.” In the below portion of my deposition, I disagreed with that implication, and articulated my understanding of the meanings of “use” and “consume.” I also mistakenly used

¹ Exhibit A, Deposition of Stan McClellan, at 83:5-84:22 (emphasis added).

the term “power purchase agreement” when referring to certain aspects of the “power option agreement,” which I later acknowledged:

2 Q So just to be clear so our -- **Your use of the**
3 **word consume here means -- it doesn't mean physically the**
4 **data center consumes the power by using it. It also**
5 **could mean that the power is sold back.**

6 **A Consume is a transactional thing. Right. The**
7 **consumption is a transaction where I'm consuming it. I**
8 **have to dispatch that power some way.**

9 Q What do you understand the term performance
10 strategy to mean in the context of the claims of the '433
11 patent?

12 A A performance strategy is deciding -- is a
13 decision based on incoming data and conditions and
14 monitored conditions as to how to dispatch the -- **how to**
15 **dispatch the power that's been consumed through the PPA**
16 **against bitcoin miners or not.**

17 Q So in your understanding of performance
18 strategy could performance strategy be to not consume
19 power?

20 A It could be --

21 Q I'm sorry. Let me -- I asked a bad question
22 because I used the word consume in a different context.

23 So in your understanding of the term
24 performance -- the meaning of the term performance
1 strategy, could a performance strategy be a decision for
2 the load to not utilize power?

3 A As long as it complies with the minimums, yeah.

4 Q What minimums must it comply with?

5 **A The minimum thresholds in the PPA.**

6 Q If I understood -- if I understood -- You said
7 PPA. I think the term from the patent is power option
8 agreement.

9 A Yeah. That's -- that's --

10 Q Are you using the two -- Do you think there's a
11 difference between -- Well, between a PPA which -- What
12 do you understand PPA to be?

13 **A I may have just used the wrong term.** I meant
14 the contracted purchase of power at a certain rate.

15 Q Do you understand that the term -- do you
16 understand there's such a thing called a power purchase
17 agreement?

18 A Yeah. I've heard of that.

19 Q Do you understand --

20 A I think they're essentially the same thing, but
21 I'm not exactly sure of the difference.
22 Q That was my next question. Is there a
23 difference or not that you are aware of?
24 A **I tend to use them interchangeably, and that**
1 may not be exactly right.²

[10] I note that the Court adopted my broader understanding of the term “consume” for both the terms “consume” and “use,” which the Court found to be interchangeable. D.I. 218 at 9. I also note that the Court found that some, but not all, minimum power thresholds may be zero. *Id.* at 13, FN5.

[11] The Court’s Markman Order also does not change my opinion on Mr. Storms significant contributions to the conception of the subject matter claimed in the ’433 Patent. Mr. Storms made significant contributions to claim limitations other than, and in addition to “power option agreement” and “minimum power threshold”

III. CLARIFICATIONS OF MY OPINIONS CONCERNING PLAINTIFFS’ CONCEPTION/POSSESSION OF AND COMMUNICATION OF THE INVENTIONS DESCRIBED IN THE ’433 PATENT

[12] My opinions have not changed regarding BearBox’s possession of the inventions recited in claims 1-20 of the ’433 Patent prior to meeting and communicating with Mr. McNamara and Lancium. The Court’s constructions of the terms “power option agreement” and “minimum power threshold” do not change my opinions, and my opinion still stands for at least the reasons set forth in my Original Report and Reply Report.

[13] In addition, I provide the following clarifications concerning the interaction between the power entity associated with the delivery of power to a load and the load in the system Mr. Storms conceived.

[14] The term “power option agreement” appears in claims 1, 6, 12, 17 and 19-20 and “minimum power threshold” appears in claims 1, 5-6, 13-14, 17 and 19-20.

² Exhibit A at 85-87.

[15] Because each claim uses the terms consistently, the following analysis applies to each of the claims reciting the associated term.

[16] BearBox conceived of and/or developed technology that could receive and process “power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals” as recited in the claims above.

[17] As I noted in my earlier reports, the systems conceived of and/or developed by BearBox satisfy these aspects of claim 1 at least because the BearBox systems calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price conditions. To be clear, my opinion is not, and never was, that calculating profitability is necessary to meet these claim limitations. Rather, calculating profitability the way the BearBox system did is one way to implement the features recited in those limitations. For example, the BearBox system used multiple time intervals, including the day-ahead hourly intervals and real-time 5-minute intervals, each of which included an associated minimum power threshold used in periodically determining performance strategies (i.e. every five minutes). The BearBox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements.³

[18] I also explained in my earlier reports that, to the extent this feature is found not to be explicitly described in the BearBox disclosure, it is my opinion that merely ordinary skill would have been required to incorporate this feature. For example, the involvement of and communication with a power entity through a QSE in connection with power option agreements

³ Ex. 5, Deposition of Austin Storms, dated February 23, 2022, pp. 99-100, 290. The numbered exhibits cited herein are to the exhibits to my Original Report.

(and the data associated with power option agreements) was well-known, conventional feature in the art at the time of the invention.⁴

[19] I listed in my Original Report and again below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to receiving power option data in which minimum power thresholds at various time intervals are used to determine a performance strategy for the system. Non-exhaustive examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. cgminer_sqlite_test.py - Remotely communicates with miners to retrieve status information
3. DA_LMP_import.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
4. DA_LMP_import_AEC.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
5. email_alert.py - Provides email alerts for mining machine states (on, off, restart, shutdown, etc)
6. EXELON4.py - Computes “break even” point for mining Bitcoin in dollars per kilowatt-hour.
7. get_current_RT_LMP.py - Fetches marketplace data and returns the real-time local market price (LMP)
8. miner_amort_breakeven_.py - Performs profitability determinations for dynamic power thresholds and manages mining system based on resulting performance strategy.
9. LMP_csv_import.py - Retrieves the marginal power pricing data from Southwest Power Pool marketplace
10. test_profit.py - Simulates a mining operation’s profitability

⁴ I discussed these issues and facts with Frank McCamant by telephone on April 1, 2022, and I understand that his report explains these concepts in additional detail. I reserve the right to supplement my report based on any additional information that may be included in his report.

11. test_test_test.py - Simulates a mining operation's profitability.

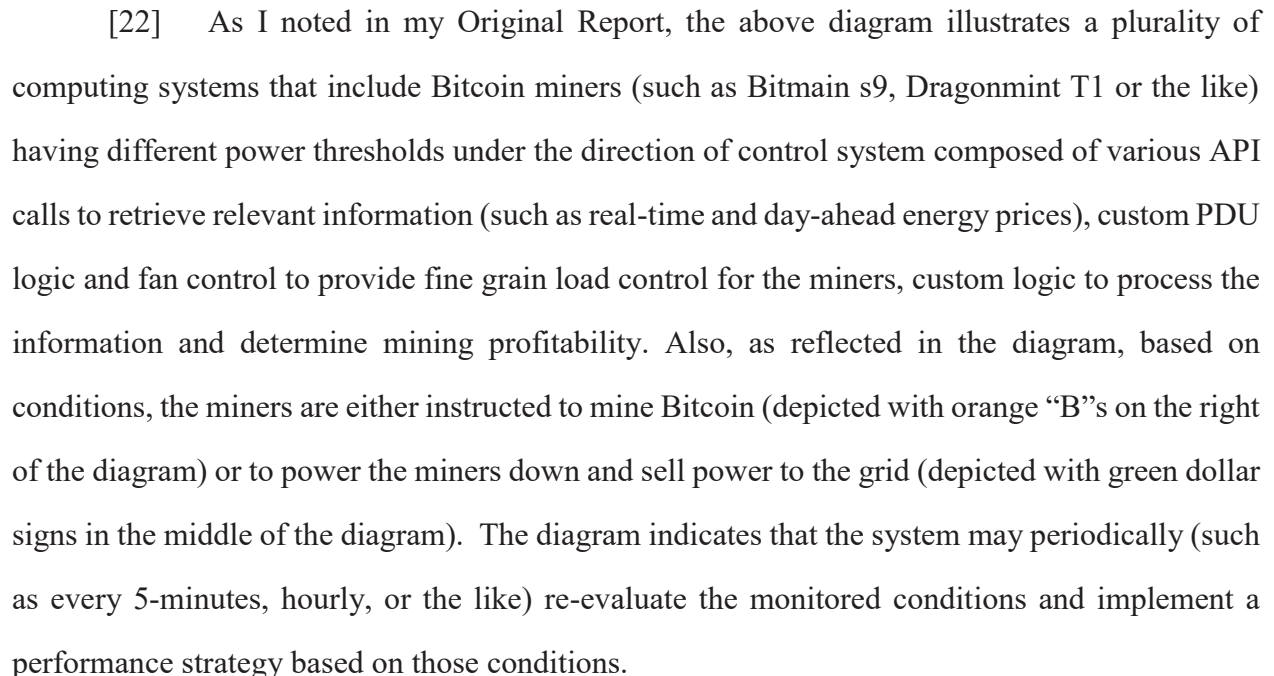
[20] In my previous reports, I also explained how the information communicated by Bearbox described these aspects of the claims at least because the system contemplated distinct time intervals, each with an associated power threshold, and in the example provided comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price conditions. For example, the annotated system diagram (reproduced below) shows the use of multiple time intervals, including the day-ahead hourly intervals and real-time 5-minute intervals, each of which included an associated minimum power threshold used in periodically determining performance strategies (i.e. every five minutes) to determine, for example, whether to mine Bitcoin.⁵ The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements.⁶

[21] The annotated system diagram is reproduced below:⁷

⁵ Ex. 4, BB00000091-92.

⁶ Ex. 5, Deposition of Austin Storms, pp. 99:13-100:16, 290:7-14.

⁷ Ex. 4, BB00000092.



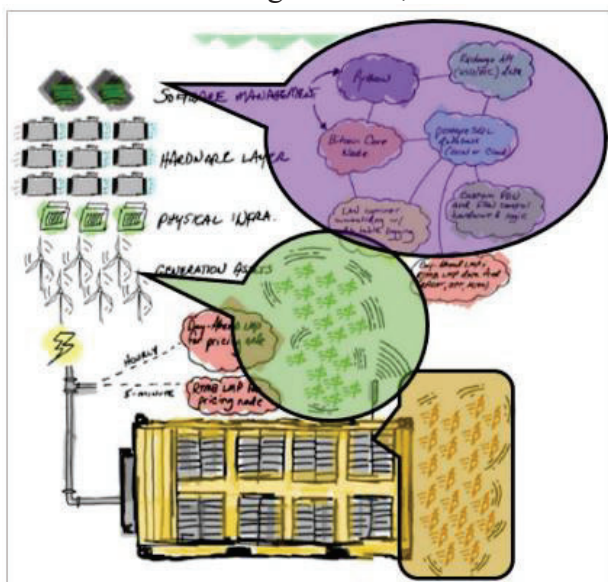
[23] I also stated in my Original Report that BearBox provided a comma-separated value (.CSV) file⁸ that described various monitored conditions, including Bitcoin price, Bitcoin block height, real time LMP day ahead LMP, an estimated network hash rate and a network difficulty. This proprietary .CSV file also described and/or explained how to determine a generated mining revenue figure to be expect from using power to mine Bitcoin, a real time LMP revenue figure based on selling energy to the grid at the current real time energy price, a day ahead LMP revenue figure based on selling energy to the grid in the future at the day ahead energy price, and a realized revenue figure that represented the most profitable of the three other revenue figures. In some instances, the most profitable option was to mine Bitcoin (*see, e.g.*, row 2 and cells H2 and L2), while in other instances, the most profitable option was to sell energy to the grid (*see, e.g.*, row 7 and cells K7 and L7).

[24] In light of the Court’s Markman Order, I clarify that the “minimum power threshold” limitation is met, for example, by the current and future expected energy usage values I noted above, which, in conjunction with the time interval data (e.g. five minutes) I referenced above, comprise the “power option data, based at least in part, on a power option agreement.” The amount of power for exemplary “minimum power thresholds” is reflected in data of the .CSV file, for example, which shows revenues generated by selling fixed amounts of energy at various real-time and day-ahead energy prices (approximately 31kW in one simulation), or the revenue to be earned by using that same amount of energy to mine Bitcoin.

[25] In light of the Court’s Markman Order, I also clarify that the “power entity associated with the delivery of power to a load” is depicted as “generation assets” in the annotated diagram shown above. The “generation assets” are depicted delivering power to the Bearbox/load by a lightning bolt in the diagram above. That this “power entity” has an “option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during

⁸ Ex. 4, BB00000097.

the interval unless the power entity exercises the option” is depicted in the annotated diagram and the methodology of the .CSV file communicated by BearBox to Lancium. For example, the diagram shows that the “power entity” may sell power to the grid by depicted with green dollar signs in the middle of the diagram emanating from the “generation assets” (shown below), which would be a result if the “power entity” exercised the option to reduce the amount of power delivered the load, the power entity instead choosing to sell that power to the grid. In addition, both the diagram and spreadsheet show day-ahead market monitoring and/or sell back on the day-ahead market, which is a market available to generators, not loads.



[26] The diagram and .CSV file also show that miners may be instructed to mine Bitcoin (depicted with orange “B”s on the right of the diagram), which necessarily uses a fixed amount of energy over a given time. In other words, the system was designed for the miners to receive instructions to consume, or use, a fixed amount of energy by mining Bitcoin unless instructed to not mine by the “power entity” so it could reduce the amount of power delivered to the Bearbox and instead sell that power to the grid. Thus, the system conceived of by Mr. Storms and communicated by Mr. Storms to Lancium meets the “power option agreement” and “minimum power threshold” aspects of the claims as those terms have been construed by the Court.

[27] Mr. Storms confirmed these roles for the windfarm “generation asset” and BearBox load, as well as related capabilities of his system, at his deposition:

5 Q. In the context you're talking about, who
6 sells the power back to the grid?
7 A. Variety of different options there. **It could**
8 **be the generator sells the power back.** It could be the
9 mining facility sells the power back. It could be a
10 different market participant depending on the ISO.
11 Q. And what we've just been discussing, **is that**
12 **part of what you maintain you talked to Mr. McNamara**
13 **about** regarding how load can be controlled to maximize
14 profitability?
15 A. Yes⁹

...

6 Q. Could that system as it -- you know, model as
7 it existed, if it got a -- **if it got an instruction or a**
8 **signal from a wind farm, for example, to go from 10**
9 **megawatts of power to 5 megawatts of power, could it do**
10 **that?**
11 A. **It could.**
12 Q. How -- how would that happen? How would the
13 system accomplish that?
14 A. **The system would turn off miners to**
15 **accommodate the decreased load.**
16 Q. You only had one miner?
17 A. Oh, yeah. I'm sorry. So that system was
18 meant to simulate a larger build, and so the relay
19 controller used in the system within my apartment is the
20 relay controller that's used in each PDU, and it's the
21 same command to all of them to decrease the load to that
22 level.¹⁰

[28] These clarifying reasons further support my opinion that BearBox was in possession of each claim element of claims 1-20 of the of the '433 patent and communicated that information to Lancium by May 9, 2019.

⁹ Ex. 5, Deposition of Austin Storms, p. 105 (emphasis added)

¹⁰ Ex. 5, Deposition of Austin Storms, p. 226 (emphasis added)

IV. CONCLUSION

[29] As a result, it is still my opinion that BearBox and Mr. Storms conceived, devised, and implemented the technology which enables a computing system to adjust power consumption based on a power option agreement, and using some combinations of power thresholds, time intervals, and monitored conditions, which is disclosed in claims 1-20 of the '433 patent, and communicated that information to Lancium.

Dated: November 11, 2022

A handwritten signature in dark ink, appearing to read "Stan McClellan", is written over a solid horizontal line.

Dr. Stan McClellan

EXHIBIT A

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX, LLC, and AUSTIN)
STORMS,)

Plaintiffs,)

-vs-

LANCIUM, LLC, MICHAEL T.)
McNAMARA, and RAYMOND E.)
CLINE, JR.,)

Defendants.)

No. C.A. 21-534-MN-CJB

Deposition of STANLEY A. MCCLELLAN, Ph.D.
taken before CAROL CONNOLLY, CSR, CRR, and Notary Public,
pursuant to the Federal Rules of Civil Procedure for the
United States District Courts pertaining to the taking of
depositions, at 233 South Wacker Drive, Suite 6300,
Chicago, Illinois, commencing at 9:08 a.m. on the 3rd day
of June, A.D., 2022.

<p style="text-align: right;">Page 2</p> <p>1 There were present at the taking of this 2 deposition the following counsel: 3 MARSHALL, GERSTEIN & BORUN, LLP by 4 MR. RAYMOND R. RICORDATI III 5 233 South Wacker Drive 6 Suite 6300 7 Chicago, Illinois 60606 8 (312) 474-6617 9 rricordati@marshallip.com 10 11 appeared on behalf of the Plaintiff; 12 13 BARNES & THORNBURG, LLP by 14 MR. MARK C. NELSON 15 2121 North Pearl Street 16 Suite 700 17 Dallas, Texas 75201 18 (214) 258-4140 19 mnelson@btlaw.com 20 AND 21 BARNES & THORNBURG, LLP by 22 MR. ADAM M. KAUFMANN 23 One North Wacker Drive 24 Suite 4400 25 Chicago, Illinois 60606 26 (312) 357-1313 27 adam.kaufmann@btlaw.com 28 appeared on behalf of the Defendants. 29 ALSO PRESENT: 30 Mr. Milo Savage, Videographer 31 Mr. Joseph Previti, Summer Associate 32 Marshall, Gerstein & Borun 33 34 35 36</p>	<p style="text-align: right;">Page 4</p> <p>1 Exhibit 207 Lancium, Investor 271 2 Presentation, May, 2021 3 4 Exhibit 208 Pictures, etc., 281 5 BB00000001-BB00000083 6 7 PREVIOUSLY MARKED EXHIBITS 8 9 Exhibit 55 Short Message Report, 189 10 Date Range 11 5/4/2019 - 5/9/2019 12 13 14 15 16 17 18 19 20 21 22 23 24</p>
<p style="text-align: right;">Page 3</p> <p>1 I N D E X 2 DEPOSITION OF STANLEY A. McCLELLAN, Ph.D. 3 TAKEN June 3, 2022 4 5 EXAMINATION BY PAGE 6 Mr. Nelson 6, 289 7 Mr. Ricordati 287 8 9 10 - - - - - 11 12 EXHIBITS MARKED 13 PAGE 14 Exhibit 200 Curriculum Vitae of 29 15 Stan A. McClellan, Ph.D. 16 17 Exhibit 201 Materials Considered by 38 18 Bearbox Expert, Dr. Stan 19 McClellan 20 21 Exhibit 202 Expert Report of Dr. Stan 42 22 McClellan 23 Exhibit 203 U.S. Patent No. 10,608,433 94 24 Exhibit 204 May 9, 2019 email from 196 25 Austin Storms to Michael 26 McNamara and attachments 27 Exhibit 205 Reply Expert Report of 246 28 Dr. Stan McClellan 29 30 Exhibit 206 Expert Report of Mark 264 31 Ehsani, Ph.D. 32 33 34</p>	<p style="text-align: right;">Page 5</p> <p>1 THE VIDEOGRAPHER: Good morning. We are going on 2 the record at 9:08 a.m. on June 3rd, 2022. Please note 3 that the microphones are sensitive and may pick up 4 whispering, private conversations and cellular 5 interference. Please turn off all cellphones or place 6 them away from the microphones as they may interfere with 7 the deposition audio. Audio and video recording will 8 continue to take place unless all parties agree to go off 9 the record. 10 This is media unit 1 of the video-recorded 11 deposition of Dr. Stan McClellan taken by counsel for 12 defendant in the matter of Bearbox LLC et al. versus 13 Lancium, LLC, et al. This case is filed in the United 14 States District Court for the District of Delaware. 15 This deposition is being held at Marshall 16 Gerstein, Borun, LLP located at 233 South Wacker Drive, 17 Suite 6300, Chicago, Illinois. 18 My name is Milo Savage from the firm Veritext, 19 and I'm the videographer. The court reporter is Carol 20 Connolly from the firm Veritext. I'm not authorized to 21 administer an oath, I'm not related to any party in this 22 action, nor am I financially interested in the outcome. 23 Counsel and all present in the room, and 24 everyone attending remotely, will please now state their</p>

<p style="text-align: right;">Page 6</p> <p>1 appearances and affiliations for the record. If there 2 are any objections to the proceeding, please state them 3 at the time of your appearance beginning with the 4 noticing attorney. 5 MR. NELSON: This is Mark Nelson of Barnes & 6 Thornburg, representing defendants. 7 MR. KAUFMANN: Adam Kaufmann with Barnes & Thornburg 8 also representing defendants. 9 MR. RICORDATI: Ray Ricordati of Marshall, Gerstein 10 and Borun representing plaintiffs. 11 THE VIDEOGRAPHER: Will the court reporter please 12 swear in the witness, and we may then proceed. 13 STANLEY McCLELLAN, Ph.D., 14 called as a witness herein, having been first duly sworn, 15 was examined upon oral interrogatories and testified as 16 follows: 17 EXAMINATION 18 By Mr. Nelson: 19 Q Good morning. 20 A Good morning. 21 Q Could you please tell the jury your name? 22 A My name is Stan McClellan. 23 Q And are you a Ph.D? 24 A Yes.</p>	<p style="text-align: right;">Page 8</p> <p>1 but -- 2 A Okay. 3 Q Have you been deposed before? 4 A Yes. 5 Q How many times? 6 A Two or three. 7 Q Which one? Two or three? 8 A Three. Three. 9 Q Can you tell me the matters that you were 10 deposed in? 11 A One was an intellectual property case that was 12 fairly recent, another one was a -- wrongful injury case, 13 and third one was a breach of contract case. 14 Q Okay. What was the -- Do you recall the name 15 of the intellectual property case? 16 A It was WSOU versus Microsoft. 17 Q What was the technology involved? 18 A Cloud computing technology. 19 Q Source code level or -- 20 A Source code review, expert reports, invalidity, 21 rebuttals, stuff like that. 22 Q And you represented plaintiffs in that case? 23 A Yes. 24 Q What about the other two, what was the general</p>
<p style="text-align: right;">Page 7</p> <p>1 Q Do you prefer to be addressed by Dr. McClellan 2 or Mr. McClellan? 3 A It doesn't matter to me. Most people use 4 doctor. 5 Q So I noticed you have some materials in front 6 of you. Can you identify what those materials are? 7 A Yeah. These are printouts of the initial 8 report and the reply report, as well as exhibit material. 9 Q What exhibit material? 10 A I don't remember exactly which exhibits these 11 were, but they're Bates labeled. 12 Q Are they exhibits to the reports? 13 A Yes, I believe so. 14 Q Do you have anything in front of you that is 15 not an exhibit to the report? 16 A I think these are all exhibits. 17 Q Okay. Do you know that or you just think that? 18 A I'm pretty sure that's the truth, but I didn't 19 print them out. 20 Are they all exhibits? 21 MR. RICORDATI: Yes. That's Exhibit 4 to the 22 report. 23 MR. NELSON: Q Okay. You can just put those aside 24 for now. We'll probably get to them shortly I'm sure</p>	<p style="text-align: right;">Page 9</p> <p>1 subject matter of those depositions? 2 A Well, the one was a wrongful injury case 3 where -- it was Debra Nelson versus Sunbeam where a lady 4 had been burned by a space heater, and the third one was 5 F5 versus Newstar where there was a breach of contract 6 issue. 7 Q And in those other two cases, which side were 8 you representing? I'm sorry. Which side were you 9 carrying as part -- on which side were you acting as an 10 expert? 11 A In the space heater case, it was the plaintiff. 12 In the breach of contract case, I don't recall. I 13 believe it was the defendant. 14 Q Do you know that or you just believe that? 15 A That's best of my recollection right now. 16 Q Have you given -- So in those three cases did 17 any of them go to trial? 18 A Yeah. The Sunbeam case went to trial about a 19 year ago. 20 Q Do you know -- what was the result? 21 A Ms. Nelson was awarded damages. 22 Q Do you recall the amount? 23 A I don't know. I think it was a million and a 24 half, something like that.</p>

<p style="text-align: right;">Page 10</p> <p>1 Q Have you ever had your opinions -- Have you 2 given opinions in cases other than where you've been 3 deposed? 4 A Yes. 5 Q And what happened in those cases to your 6 knowledge? 7 A Typically they were resolved before they -- 8 before the deposition happened. Oftentimes the legal 9 team goes on to something else and doesn't notify me and 10 that's how I find out that things have finished. 11 Q So as far as the opinions that you have given, 12 whether they have been in deposition or otherwise, have 13 you ever had them challenged? 14 A Yeah. In the -- there was a Daubert motion in 15 the Sunbeam case. 16 Q Any others? 17 A No. 18 Q Have you ever had any opinions struck? 19 A No. 20 Q So I know you have been deposed before, but 21 let's just go over just a couple of quick housekeeping 22 rules. So I'm going to be asking questions today. 23 There's a court reporter here, a videographer. You 24 understand you're under oath, correct?</p>	<p style="text-align: right;">Page 12</p> <p>1 team before -- to make the hiring decision. 2 Q When was that? 3 A I don't recall specifically. 4 Q What did you and Mr. Storms talk about? 5 A We talked about some of the issues in the case, 6 we talked about some of his background, some of my 7 background, you know, basically run through my CV and 8 just essentially an interview, I guess. 9 Q How long ago was that? 10 A I don't recall specifically. It was whenever I 11 got first involved with this case. 12 Q When did you first get involved in this case? 13 A I don't recall the specific dates. I'd have to 14 look at my -- I'd have to look at my notes. I think it 15 was -- I think it was late last year, like November, 16 December of last year. 17 Q Of 2021? 18 A Yes. I think that's -- sometime in that 19 timeframe. I'm not exactly sure of the specific dates. 20 Q On that interview, did you and Mr. Storms talk 21 about anything in particular? This is before you were 22 retained. 23 A Before I was retained, yeah. The way those 24 interviews go is, you know, I introduced myself and I go</p>
<p style="text-align: right;">Page 11</p> <p>1 A Right. 2 Q You understand the court reporter is taking 3 down your answers? 4 A Yes. 5 Q Is there any reason you can't testify 6 truthfully today? 7 A No. 8 Q When were you -- Well, who retained you in this 9 case? 10 A The defendant. Not the defendant. The 11 plaintiff. 12 Q Do you recall the specific person that retained 13 you? 14 A Austin Storms is the name of the plaintiff, and 15 Bearbox, LLC. 16 Q Is he the one who called you and hired you, or 17 did somebody else do that? 18 A No, I was hired through an aggregator. 19 Q Which one? 20 A Bar Group. 21 Q And did you -- did you talk to Mr. Storms -- 22 Who made the decision to hire you is my question. Was it 23 a lawyer or was it Mr. Storms personally? 24 A I spoke with Mr. Storms as well as his legal</p>	<p style="text-align: right;">Page 13</p> <p>1 through different elements of my background and my CV and 2 different types of projects that I've worked on and 3 technologies. And then we go through a similar process 4 as this right now, what cases have I been involved with, 5 what positions was I dealing with and those kind of 6 things, and then they introduce their issue, their case. 7 Quite often, if there's a patent involved, they'll 8 provide the patent or some documents for review 9 beforehand. That's -- that's -- that's what happened in 10 this particular case as well. I mean, they all kind of 11 follow the same format. 12 Q Did you review the patent in this case before 13 you were retained? 14 A I don't believe so. I don't believe so. That 15 usually happens with specific types of cases. This is a 16 -- this case has kind of an interesting twist. I may 17 have looked at the abstract of the patent, of the '433 18 patent, but the majority of the discussion was, you know, 19 basically going through my resume. 20 Q So can you summarize for me your technical 21 experience? What's your area of expertise? 22 A Well, I have a background in -- I have a pretty 23 broad -- pretty broad technology background in things 24 related to signals and systems, largely signals and</p>

<p style="text-align: right;">Page 14</p> <p>1 systems, and a lot of computer systems, computer 2 networks, telecommunication systems, system integration, 3 things like that. It kind of encompasses an enormous 4 amount -- an enormous range of things so it's hard to 5 summarize other than signals and systems and system 6 integration. 7 Q What do you mean by signals and systems? 8 A Signals and systems is a fundamental part of 9 electrical engineering that deals with the propagation of 10 electromagnetic radiation, deals with characteristics of 11 signals whether they're electrical or some other kind. 12 It deals with how systems -- how systems process signals, 13 how signals are turned into information, how information 14 is changed or manipulated by a system. It's kind of a 15 black box approach with things that gozintas and gozoutas 16 out of and how things fit together. 17 Q Did you consider yourself an expert in bitcoin 18 mining? 19 A I'm familiar -- I'm a little bit familiar with 20 bitcoin mining. I wouldn't consider myself a great 21 expert in bitcoin mining, but familiar with it. 22 Q When did you become familiar with it in the 23 context of this case or otherwise? 24 A It's just general technical knowledge. I mean,</p>	<p style="text-align: right;">Page 16</p> <p>1 block height? 2 A The block height is -- My understanding of 3 block height -- I'm not a bitcoin expert, but my 4 understanding of block height is the size of the block, 5 the complexity of the block itself. 6 Q What's the network hash rate? 7 A The network hash rate is how fast the network 8 can turn around the validation of chains of blocks. 9 Q Is your understanding of the network hash rate 10 is global or local? 11 MR. RICORDATI: Object to form. 12 You can answer. Object to form. You can 13 answer. 14 THE WITNESS: I thought you said my name. Sorry. 15 I don't know. It's -- it's a metric that's 16 associated with difficulty. I don't know if it's global 17 or local. 18 MR. NELSON: Q Do you understand how bitcoin price 19 is calculated in the market, not -- in the market? 20 A I have a basic understanding. 21 Q What's your understanding? 22 A The -- the bitcoin targets are released on 23 something like ten-minute intervals and then -- then the 24 miners try to validate the hashes, and then it becomes a</p>
<p style="text-align: right;">Page 15</p> <p>1 it's a very popular area, so -- 2 Q When did you -- when do you believe you became 3 somewhat familiar with it? 4 A Several years ago. Couple years ago. We have 5 -- we do senior design projects all the time. We've had 6 some senior design projects that were related to 7 understanding how bitcoin works, and so, you know, just 8 dribs and drabs here and there with students and projects 9 and so on. 10 Q Do you know what the block height is? 11 A I don't know what the -- the block height has 12 to do with the size of the block in the chain, I believe, 13 is what I recall. 14 Q Can you -- can you specifically tell me what 15 that relationship is? 16 A Well, block chain is a kind of a weird 17 perturbation -- perturbation is not the right word. A 18 weird configuration of a linked list, and so hashes of 19 previous blocks are inserted in the future blocks, and 20 information can be inserted in the future blocks, blocks 21 get larger, right. The individual blocks get larger and 22 the chain grows so there's a difficulty metric that's 23 associated with that. 24 Q And do you think that difficulty metric is the</p>	<p style="text-align: right;">Page 17</p> <p>1 bidding kind of a -- typical market bidding. 2 Q Do you have experience in the -- well -- Do you 3 understand the difference -- Do you have experience in 4 the energy markets? 5 A Not directly in the energy market, no. 6 Q Do you know what ancillary services are? 7 A Ancillary services can mean a lot of different 8 things. In the power distribution market, ancillary 9 services typically means things that are brought online 10 on demand. It often means things are brought online on 11 demand. 12 Q Let me ask it more specifically. Do you have 13 an understanding with respect to the Electric Reliability 14 Council of Texas, also called ERCOT, all caps, what 15 ancillary services mean? 16 A I'm not an ERCOT expert. 17 Q Do you know what a controllable load resource 18 is? 19 A Yes. 20 Q What is it? 21 A It's a load that can be controlled locally or 22 remotely by ERCOT. It's a -- sort of a -- sort of a 23 contractual business arrangement where ERCOT can command 24 the load to shed.</p>

<p style="text-align: right;">Page 18</p> <p>1 Q And in a controllable load resource in this 2 context, ERCOT is the one doing the commanding, is that 3 right? 4 A I think it can be local or remote. 5 Q But who is making the decision whether or not 6 the load will curtail, meaning shed? 7 A Typically it's ERCOT that's doing that because 8 ERCOT has a -- ERCOT wants load to reduce. 9 Q Are you aware of any other situations where the 10 ultimate decision was not ERCOT's? 11 A Sure. Every local provider sheds loads 12 separately from ERCOT. 13 Q Can you give me a specific example? 14 A Often various substations will shed load at the 15 feeder level and they have prioritized feeders for when 16 they have emergency issues and they need to shed load and 17 turn feeders off. 18 Q Is that a controllable load resource situation 19 though, or is that simply a load -- 20 A That's load shedding. That's load shedding. 21 That's load shedding. It's not end point based. It can 22 total the load resources, end point based load shedding. 23 Q Yeah. I think we were talking past each other. 24 So my question -- original question, are you aware of any</p>	<p style="text-align: right;">Page 20</p> <p>1 A No. 2 Q Are you familiar with the difference of zonal 3 or nodal pricing in the energy market? 4 A Vaguely, vaguely. 5 Q What do you know about it? 6 A Well, I'm not an energy pricing expert, but I 7 understand that energy prices can be manipulated at 8 different scales and at different times. So the zonal 9 and nodal would be different scales. 10 Q Can you explain what you mean by different 11 scales? 12 A Like geographic scales. 13 Q Are you familiar with what grid connected 14 means? 15 A Uh-huh. 16 Q What does grid connected mean? 17 A Grid connected is something that's authorized 18 to connect directly to the electric -- the service 19 operator's facility. 20 Q What do you mean by service operator's 21 facility? 22 A The service provider owns all of the electrical 23 infrastructure, and if you're grid connected, you're 24 allowed to connect to that. The point at which your</p>
<p style="text-align: right;">Page 19</p> <p>1 situations where in a controllable load resource 2 situation an entity other than ERCOT or another ISO is 3 making the decision whether or not the load should 4 curtail? 5 A Typically the control of the load resource is 6 done by the operator. 7 Q By the -- 8 A Or in this case ERCOT would be asking the 9 operator shed the load. 10 Q Do you know what reg up is? 11 MR. RICORDATI: Objection. Vague. 12 THE WITNESS: You'll have to define that more. 13 MR. NELSON: Q In the context of ancillary 14 services. 15 A No. 16 Q Do you know what reg down is in the context of 17 ancillary services? 18 A No. 19 Q Do you know what nonspin is in the context of 20 ancillary services? 21 MR. RICORDATI: Objection. Vague. 22 THE WITNESS: No. 23 MR. NELSON: Q Do you know what ERS is in that 24 context?</p>	<p style="text-align: right;">Page 21</p> <p>1 house is grid connected is the meter, for example. 2 Q Are you familiar with what behind the meter is? 3 A Uh-huh. 4 Q And what is behind the meter? 5 A Well, it kind of depends on your perspective, 6 right. Typically behind the meter is on the service 7 provider's side of the meter. Sometimes people refer to 8 behind the meter as the user's side of the meter, so it's 9 kind of a dependent term. 10 Q So in the context as you were using it earlier, 11 the house would be behind the meter, the meter would be 12 the point where it's connected to the grid. Is that 13 fair? 14 A The meter is the point where the load connects 15 to the grid. Typically behind the meter means inside the 16 service -- My familiarity of the term behind the meter 17 means inside the service provider's network. It can also 18 mean outside the service provider's network on the load 19 side of the meter. People use that term differently. 20 Q Okay. And on the load side of the meter, 21 behind the meter would be sort of downstream from meter 22 if you're thinking of electric -- if electricity flows 23 from the generator ultimately to the grid to a meter and 24 then to an end point, behind the meter would be after --</p>

<p style="text-align: right;">Page 22</p> <p>1 on the downstream side of the meter in that context, is 2 that right?</p> <p>3 A Depending on how you're using the term behind 4 the meter. If it's on the -- if it's on the load side of 5 the meter, then it would be beyond the meter. If it's on 6 the service provider side of the meter, then it would be 7 closer to the generator than the meter.</p> <p>8 Q So if I understand your definition of behind 9 the meter, it could be on the same side of the meter as 10 the generator if it's on the service provider side?</p> <p>11 MR. RICORDATI: Objection. Mischaracterizes the 12 evidence.</p> <p>13 THE WITNESS: It's not my definition of behind the 14 meter. I'm telling you that I have heard the term used 15 in a lot of different ways, and it's kind of a positional 16 term.</p> <p>17 MR. NELSON: Q Well, I'm asking your understanding 18 of it. I think you use it somewhere in your expert 19 report, and I want to know what your understanding of 20 behind the meter is.</p> <p>21 A It depends on the context. Behind the meter in 22 a forward flow case often means downstream of the meter. 23 Behind the meter in a backward flow case typically is 24 used to mean on the generator side of the meter.</p>	<p style="text-align: right;">Page 24</p> <p>1 the energy from the generator to the distribution grid, 2 and that's the T. And the D is the cost of the moving 3 the energy through the distribution grid to the load.</p> <p>4 Q Do you know how they're calculated?</p> <p>5 A No, that's based on a lot of different factors.</p> <p>6 Q What factors are you aware of go into the 7 calculation?</p> <p>8 A Well, there's the cost of the wires, there's 9 cost of maintaining the wires, there's the people costs 10 that are associated with the wires, there's the cost of 11 the transformers, there's the cost of the energy, there's 12 the cost of the ground, the facilities. I mean, it's 13 a --</p> <p>14 Q Do those costs --</p> <p>15 A Those are all costs that are associated with 16 the transmission and distribution infrastructure.</p> <p>17 Q Okay. Do those costs vary depending on whether 18 the generator is a renewable or whether the generator is 19 a nonrenewable?</p> <p>20 A I'm not familiar with the calculation of those 21 specific costs. I would assume that they change based on 22 that.</p> <p>23 Q Do you consider yourself an expert in source 24 code?</p>
<p style="text-align: right;">Page 23</p> <p>1 Q What's your understanding of behind the meter 2 in this case?</p> <p>3 A I'd have to look specifically at what the 4 context it was used in. I don't recall. I don't recall 5 the entirety of the report. I'd have to look at the 6 context it was used in.</p> <p>7 Q Okay. You can't -- you can't give me that 8 understanding without looking at the report?</p> <p>9 A You're asking specifically for the context of 10 how the behind meter term was used in the report, so -- 11 and I don't recall the entirety of the report, so I'd 12 have to look at the context it was used in.</p> <p>13 Q So your answer is no, you can't tell me your 14 understanding of behind meter in this case without 15 looking at the report, is that right?</p> <p>16 MR. RICORDATI: Objection. Asked and answered.</p> <p>17 THE WITNESS: If you want me to get more specific 18 about what the specifics of behind the meter mean in this 19 case, I'd have to look at the context in the report.</p> <p>20 MR. NELSON: Q Do you know what transmission and 21 distribution costs are for energy, electricity?</p> <p>22 A Uh-huh.</p> <p>23 Q What are they?</p> <p>24 A They're the costs associated with transmitting</p>	<p style="text-align: right;">Page 25</p> <p>1 A Uh-huh.</p> <p>2 Q Do you know what the term open source means?</p> <p>3 A Uh-huh.</p> <p>4 Q What's it mean?</p> <p>5 A Typically it means source that's been community 6 developed or initially developed by one or small group of 7 people that have been provided on one of several 8 different sites for the community to participate in the 9 development of.</p> <p>10 Q Have you ever written source code yourself?</p> <p>11 A Yes.</p> <p>12 Q What languages do you write in?</p> <p>13 A Depends on the needs of the project. A lot of 14 different languages.</p> <p>15 Q Well, tell me the languages -- tell me the 16 languages of source code that you know how to write in.</p> <p>17 A We'd be here all day.</p> <p>18 Q Well, give me a high level summary. Give me an 19 approximation of how many languages.</p> <p>20 A 50. I don't know. There's some that are 21 nonstandard. One called Staple, for example, that's 22 specific to a particular system. CEC plus plus, Python, 23 Java, Java Script -- I mean, Rust. It goes down the 24 line.</p>

<p style="text-align: right;">Page 26</p> <p>1 Q Okay. That's fair.</p> <p>2 When is the last time you wrote something --</p> <p>3 you wrote code in Python?</p> <p>4 A Yesterday.</p> <p>5 Q For what project?</p> <p>6 A For -- for a communications analysis project</p> <p>7 that I'm working on.</p> <p>8 Q In the bitcoin space or in another space?</p> <p>9 A Has nothing to do with bitcoin.</p> <p>10 Q Is there anything specific about bitcoin that</p> <p>11 makes Python sort of the code of choice for bitcoin or</p> <p>12 not?</p> <p>13 A Python is the code of choice for a lot of</p> <p>14 different things because it's pretty easy to use and it</p> <p>15 has a lot of tools and a lot of -- a lot of community</p> <p>16 support. There are a lot of packages that can be easily</p> <p>17 included that can provide really specialized facilities</p> <p>18 that you don't have to deal -- It's very easy to include</p> <p>19 capabilities in Python that extend its functionality</p> <p>20 rapidly. So it's a good language for a lot of different</p> <p>21 things.</p> <p>22 Q Have you ever used -- have you ever used open</p> <p>23 source software in the context of your writing code?</p> <p>24 A Oh, yeah. All the time.</p>	<p style="text-align: right;">Page 28</p> <p>1 package or not? Strike that. That's a bad question.</p> <p>2 A I thought you meant to say if it has a license,</p> <p>3 an open source license. I'm sure it does. I don't know</p> <p>4 what it is.</p> <p>5 Q So you provided -- you provided your CV in</p> <p>6 connection with this case, correct?</p> <p>7 A Yes.</p> <p>8 Q One of the exhibits to your report.</p> <p>9 A Yes.</p> <p>10 Q Is that your most current CV?</p> <p>11 A It changes almost every day. I don't know what</p> <p>12 the date was that that CV was provided. I'd --</p> <p>13 Q I'll hand it to you in a minute, but just let</p> <p>14 me --</p> <p>15 A That's why there's a date in it.</p> <p>16 Q Yeah.</p> <p>17 A That was current as of the date that was</p> <p>18 stamped in it, but it changes every time a paper is</p> <p>19 published or every time a student graduates or whatever.</p> <p>20 MR. NELSON: So, Counsel, to the extent we don't</p> <p>21 have the current CV, could you produce that to us?</p> <p>22 MR. RICORDATI: Yeah, we can get that.</p> <p>23 MR. NELSON: Q And let me hand you what we'll mark</p> <p>24 as Defendant's Exhibit 200, which was a copy of the CV</p>
<p style="text-align: right;">Page 27</p> <p>1 Q You have to pay for that, or is it free?</p> <p>2 A Typically depends on how it's licensed.</p> <p>3 There's a bunch of different open source licenses. It</p> <p>4 depends on how it's licensed and how you use it.</p> <p>5 Sometimes you don't pay exactly for the code, you pay for</p> <p>6 the service that surrounds the code, the service and</p> <p>7 support that surrounds the code.</p> <p>8 Q Is it -- is it also free many times? Is open</p> <p>9 source code free many times?</p> <p>10 A Often.</p> <p>11 Q Do you think -- is it more common that open</p> <p>12 source software is made available to the public for free</p> <p>13 or is it more commonly licensed in some fashion?</p> <p>14 A I haven't -- I don't know the statistics on</p> <p>15 that so I can't say what's common or not. There are a</p> <p>16 lot -- 15 or 20 different open source licenses that have</p> <p>17 different criteria and people choose -- the author of the</p> <p>18 code chooses which license to publish the code under and</p> <p>19 that creates constraints on how the code is consumed and</p> <p>20 used after that point. I'm most familiar with GPL</p> <p>21 variants of licensing because those are the ones that</p> <p>22 certain often used code packages that I deal with are</p> <p>23 licensed under.</p> <p>24 Q Do you know if Python is licensed under a code</p>	<p style="text-align: right;">Page 29</p> <p>1 that was included in the case.</p> <p>2 A The date in the top right-hand corner of this</p> <p>3 actually answers three separate questions that you've</p> <p>4 already asked.</p> <p>5 MR. RICORDATI: Do you have a copy for me?</p> <p>6 (Exhibit 200 marked as requested)</p> <p>7 THE WITNESS: You asked earlier when I was first</p> <p>8 involved with this case. December the 8th. That would</p> <p>9 have been when I provided my CV for the --</p> <p>10 MR. NELSON: Q Okay. Do you know why the decision</p> <p>11 was made to retain you in this case as opposed to</p> <p>12 somebody else?</p> <p>13 A I'm not privy to that thought process.</p> <p>14 Q What did you tell Mr. Storms and his counsel</p> <p>15 during your interview regarding your opinion on the case</p> <p>16 before you were retained?</p> <p>17 A I didn't have an opinion on the case before I</p> <p>18 was retained. We just looked through some of the basics</p> <p>19 of it, and then, you know, as I mentioned before, the --</p> <p>20 went through the CV during the interview.</p> <p>21 Q So let me focus your attention on your list of</p> <p>22 cases. I think they're -- trying to find the right page</p> <p>23 here. If you turn -- You've got a recent consultancies</p> <p>24 page.</p>

<p style="text-align: right;">Page 30</p> <p>1 A Uh-huh.</p> <p>2 Q Let me ask you this. Go to your selected</p> <p>3 publications page, which should be on page 18.</p> <p>4 A Yeah.</p> <p>5 Q Is that -- is that a list on pages 18 going</p> <p>6 over to page 20 and ending on page 23, is that a list of</p> <p>7 all of your publications and presentations, or is that a</p> <p>8 subset?</p> <p>9 A It's a subset.</p> <p>10 Q So what criteria did you use to create the</p> <p>11 subset?</p> <p>12 A These are typically the publications that</p> <p>13 academic institution care about. They're called</p> <p>14 peer-reviewed publications.</p> <p>15 Q So the selection here on the CV, was it made</p> <p>16 for this case, or was it just otherwise what you did?</p> <p>17 A No, no. This is the subset of quote, unquote,</p> <p>18 peer-reviewed publications. There's lots of other</p> <p>19 publications that are not on this because they were not</p> <p>20 peer reviewed so academic institution doesn't care about</p> <p>21 them.</p> <p>22 Q So if you look at page 12, recent</p> <p>23 consultations.</p> <p>24 A Uh-huh.</p>	<p style="text-align: right;">Page 32</p> <p>1 that one is for defendant. That one is for -- yeah, it</p> <p>2 says it in there, in that last line.</p> <p>3 Q Okay. So the pink ones are the ones where you</p> <p>4 represented -- where you represent plaintiff, correct?</p> <p>5 A Yeah. The ones where it says law firm and then</p> <p>6 the name of the law firm, for plaintiff.</p> <p>7 Q Okay. So let's talk about the IPR one. It's</p> <p>8 the third bullet point down on page 13.</p> <p>9 A Uh-huh.</p> <p>10 Q Were you on the patentholder side on that --</p> <p>11 A I was on the American Express side of that.</p> <p>12 Q Was that the --</p> <p>13 A I believe they were the defendant.</p> <p>14 Q The challenger? The patent challenger?</p> <p>15 A That one has been a while back so I'd have to</p> <p>16 look -- I'd have to look at the notes.</p> <p>17 Q Okay. And then let me hand you a yellow one,</p> <p>18 and if you can highlight the ones where you know you</p> <p>19 represented -- you represent the defendant. I understand</p> <p>20 the law the firm is in there on some of them, but it's</p> <p>21 not in there on all of them.</p> <p>22 A The only one that's not in there for is the IPR</p> <p>23 case with American Express.</p> <p>24 Q And that one you were on the American Express</p>
<p style="text-align: right;">Page 31</p> <p>1 Q Let me hand you a pink highlighter if I can and</p> <p>2 ask that you highlight in pink the cases where you were</p> <p>3 retained by the plaintiff's side.</p> <p>4 A It already has that in here, doesn't it?</p> <p>5 Q I was having a little trouble figuring out</p> <p>6 that's why I asked that you just highlight in pink just</p> <p>7 so it's real clear.</p> <p>8 A This is a version that doesn't specifically say</p> <p>9 which one is which. Okay. Plaintiff would have been the</p> <p>10 Sunbeam case, the Microsoft case -- all three of the</p> <p>11 Microsoft cases. There's four. One of them was dropped.</p> <p>12 There's the other Microsoft cases and HP. So all the</p> <p>13 ones on page 12. I don't know about that one. I don't</p> <p>14 know about that one.</p> <p>15 Yeah, it does, it says for plaintiff. If it</p> <p>16 says -- in the law firm line for all of them, in the</p> <p>17 fourth or fifth line after every bullet, it says law</p> <p>18 firm, blank, blank, blank law firm for plaintiff. So you</p> <p>19 can tell by looking at that line on those which one is</p> <p>20 the plaintiff. So --</p> <p>21 Q Okay. Some of them don't have it --</p> <p>22 A It's listed in there if I knew it. There's one</p> <p>23 I didn't know which was the inter partes review, that</p> <p>24 wouldn't have been plaintiff. That was for defendant,</p>	<p style="text-align: right;">Page 33</p> <p>1 side?</p> <p>2 A Yeah.</p> <p>3 Q If you hand me the highlighters back, I</p> <p>4 appreciate it. Thank you.</p> <p>5 On your list of publications are there</p> <p>6 publications in the last ten years that are not on your</p> <p>7 CV?</p> <p>8 A Yeah. I think I've already answered that. The</p> <p>9 ones that are -- the CV only contains the ones that are</p> <p>10 quote, unquote, peer reviewed. So there's publications</p> <p>11 that are not peer reviewed that are not contained in</p> <p>12 there. Examples of that would be reports that are</p> <p>13 internal to an organization or reports that are -- or</p> <p>14 papers or any other sort of output that was not submitted</p> <p>15 to a collection of referees for evaluation. So there's</p> <p>16 lots and lots of those.</p> <p>17 Q Have you ever written source code for a load</p> <p>18 that connected it to the electrical grid?</p> <p>19 MR. RICORDATI: Objection. Vague.</p> <p>20 THE WITNESS: For a load connected to the electrical</p> <p>21 grid. Yes.</p> <p>22 MR. NELSON: Q What? Give me an example.</p> <p>23 A Well, in about 2018 timeframe I started a</p> <p>24 company -- we can look on -- where is it? At the bottom</p>

<p style="text-align: right;">Page 34</p> <p>1 of page 7, it's about 2008 timeframe, Power Tagging 2 Technologies. That company developed devices that were 3 both -- that were loads for a grid that were inside the 4 -- depending on -- where you talk about behind the meter, 5 they were on the provider side of the meter, they were on 6 the client -- they were on load side of the meter, they 7 were on the service side of the meter, they were in the 8 substation. All of those had software associated with 9 them.</p> <p>10 Q What were those products? 11 A Those were -- the products did slightly 12 different things to form a sort of reconnaissance for the 13 feeders. So the device would -- depending on where it 14 was installed, it would listen -- essentially -- the best 15 way to think about this is sonar. It was sonar for a -- 16 for an electrical feeder. It would listen to what was 17 going on on the electrical feeder, it would process the 18 data, it would make some sense out of the data, and then 19 the devices would communicate with themselves at ultra 20 low frequency on the feeder wire itself.</p> <p>21 Q And what was the purpose of these products? 22 A It was to create a control system that extended 23 beyond the substation and directly into the individual 24 load. So it made the individual load -- it integrated</p>	<p style="text-align: right;">Page 36</p> <p>1 the first word was whatever that thing was, and then 2 intelligence module. So it was -- it was something 3 intelligence module depending on where it was sitting in 4 the grid.</p> <p>5 Q What was the cost of the product? Do you 6 remember? 7 A I don't remember. 8 Q \$100? \$10,000? 9 A It was different depending on where they sat. 10 I mean, the ones that sat at the substation were tens of 11 thousands of dollars.</p> <p>12 Q What about if they sat in other places? 13 A I don't believe we ever successfully 14 commercialized the ones on the load side -- directly on 15 the load side because that was a partner play. That 16 wasn't -- you had to have those embedded in the device. 17 So it was a white goods partner play. You wanted them 18 embedded in the water heater, you wanted them embedded in 19 the washing machine, you wanted them embedded in the car, 20 whatever. So not an aftermarket add-on.</p> <p>21 Q So on the load side, these were small chips, 22 that kind of stuff that would control a washing machine 23 or refrigerator, something like that? 24 A The downstream control part was -- when you use</p>
<p style="text-align: right;">Page 35</p> <p>1 control and reconnaissance for individual load devices in 2 with a larger control system that was situated at the 3 substation. So it allowed the provider to control the 4 characteristics of the load; turn it off and on, tell it 5 to stop consuming power. It also allowed the load device 6 to communicate its status with the provider side devices. 7 It allowed the provider side devices to communicate 8 between themselves with status, and so on. So it was a 9 state management control and state management system.</p> <p>10 Q What was -- Is this company still in existence? 11 A No. 12 Q Did you ever sell any products? 13 A The company I believe was consumed by a 14 division of Dominion Power, and the technology is still 15 used by the spinoff -- a spinoff that Dominion Power made 16 to do distributed voltage optimization.</p> <p>17 Q Was the products that you were involved in code 18 for, were they ever -- were they ever sold? 19 A Yes. 20 Q What were their names? 21 A I don't -- intelligence module. Something like 22 intelligence module. Like a feeder intelligence module, 23 a transformer intelligence module. It was -- depending 24 on where they were sitting, it was -- the first letter --</p>	<p style="text-align: right;">Page 37</p> <p>1 the term small chip, the downstream control part was 2 small. The upstream part was large -- was physically 3 pretty big. It was the size of a softball. Maybe a 4 little bit bigger than a softball.</p> <p>5 THE VIDEOGRAPHER: Excuse me. Mr. McClellan, can 6 you kind of move to the center of the table? 7 THE WITNESS: I'm sorry. 8 THE VIDEOGRAPHER: That's fine. Thank you. 9 MR. NELSON: Q So you gave reports in this case, 10 correct, you submitted reports, expert reports? 11 A In this present case, yeah. 12 Q Yeah. 13 A They're right here. 14 Q And did you -- let's talk about your initial 15 report first. Did you write that? 16 A I created the initial draft, and then -- these 17 things have a certain format to them, so the legal team 18 fixed the format and I contributed content from that 19 point on. 20 Q So did you physically write any of the report? 21 A Oh, yeah. 22 Q Do you know how much you have been paid in 23 connection with the initial report and whatever went into 24 that?</p>

<p style="text-align: right;">Page 38</p> <p>1 A You mean a cumulative total of what I've been 2 paid?</p> <p>3 Q Well, I was going to get to that. I was trying 4 to figure out sort of for the first report do you know 5 how much you were paid for that.</p> <p>6 A It's on an hourly basis. It's not on -- it's 7 not on a deliverable basis. I'd have to go back and look 8 at -- So I don't know. I can't tell you how much for 9 this piece of work or this piece of work. It's done on 10 an hourly basis.</p> <p>11 Q Can you estimate the amount of hours you've 12 spent on this case so far?</p> <p>13 A Not offhand. I'd have to look at the billing 14 slips.</p> <p>15 Q 50?</p> <p>16 A Probably on the order of that, yeah.</p> <p>17 Q Total?</p> <p>18 A Yeah.</p> <p>19 Q What's your billing rate? What's your hourly 20 rate?</p> <p>21 A \$320 an hour.</p> <p>22 Q Let me get this mark as Exhibit 2 -- 201. 23 Sorry.</p> <p>24 (Exhibit 201 marked as requested)</p>	<p style="text-align: right;">Page 40</p> <p>1 the legal team is provided to me, and it has all these 2 things in there with their Bates labels. And then if I 3 have to -- if I -- I'm speaking in general terms. If I 4 look around and find something else, then it goes into 5 that repository as well. I don't believe that I added 6 anything to this repository. I don't recall adding 7 anything to this repository, so they were provided by 8 counsel.</p> <p>9 Q And I guess my question is, how is it 10 determined what you looked at? Did you get the materials 11 from counsel, hey, you know, Dr. McClellan look at this 12 and this and this, or was it done in some other way?</p> <p>13 A Well, the -- counsel provides the web 14 interface, and it has all the materials that are 15 associated with the case, and a lot of those materials 16 are background stuff. In this case it was source code, 17 pictures of brochures, emails. This one actually had CSV 18 files. The source code was Python. So the repository 19 that was provided to me was pretty comprehensive, and it 20 contained all the background information for this case. 21 There was no need for me to go find something else.</p> <p>22 Q Well, when you say background information for 23 this case, what do you mean?</p> <p>24 A The information associated with the case.</p>
<p style="text-align: right;">Page 39</p> <p>1 Q Can you identify Exhibit 201, Defendant's 2 Exhibit 201?</p> <p>3 A It looks like the list of files. It's a 4 listing of files with Bates labels.</p> <p>5 Q And this I believe should be Exhibit 2 to your 6 report. Is this the list of materials you considered in 7 connection with your first report?</p> <p>8 A It looks like it.</p> <p>9 Q Did you consider any other materials other than 10 what's listed here in preparing your first report?</p> <p>11 A I don't believe so. I mean, the purpose of 12 this list is to be a comprehensive set of materials that 13 were used in preparing the report.</p> <p>14 Q Did you prepare that list or did counsel 15 prepare it?</p> <p>16 A Well, this -- The Bates-labeled items are 17 provided on website type interface. And so the list is 18 created based on what's provided through that website 19 interface. And if I find other materials, then they get 20 kind of incorporated into that.</p> <p>21 Q So the materials you looked at, did -- how did 22 you get those materials? Were they provided by counsel, 23 or were they given to you in another way?</p> <p>24 A I think -- the website interface that's made by</p>	<p style="text-align: right;">Page 41</p> <p>1 Q But is it-- Do you know if what you were 2 provided was the entire information associated with the 3 case or some subset of that information?</p> <p>4 A I don't know. I looked at the materials that 5 were provided to me. I can't -- I can't tell you if they 6 were a subset or if they were -- is other stuff that was 7 not provided to me.</p> <p>8 Q Well, I guess when you say provided to you, was 9 it provided to you in a way that, okay, Dr. McClellan, 10 here is a set of materials for you to look at, or was it 11 provided to you, here's a website, go find materials?</p> <p>12 A Well, it's a secure website that has materials 13 in clusters, and I was -- review of the material in the 14 different clusters and decide which parts of that 15 material was important to creating a report. One of 16 those clusters, for example, was the source code. So 17 review the source code. One of the clusters was the set 18 of documents that were -- sort of communications 19 documents. So the stuff was sort of pre-clustered, and 20 it was presented to me through the secure website for me 21 to review and create an opinion about based on those 22 materials for the purpose of creating the report.</p> <p>23 Q I notice that there's only a few Lancium 24 documents here. Did you review any additional Lancium</p>

<p style="text-align: right;">Page 42</p> <p>1 documents in preparing this report other than the ones 2 listed?</p> <p>3 A We're talking about the initial report?</p> <p>4 Q The initial report.</p> <p>5 A No, I don't believe so.</p> <p>6 Q So was the source code provided to you 7 electronically through a website or in some other way?</p> <p>8 A Yeah. The secure web portal that's provided to 9 me has clusters of information. One of those clusters 10 was PDFs of the source code with Bates labels, and one of 11 those clusters was PDFs of communications, and another 12 cluster was PDFs of background documents and stuff like 13 that. So the secure web portal has clusters of 14 information that's not digested, it's just partitioned.</p> <p>15 Q So your initial report has -- Let me go ahead 16 and just mark that. We'll get this document marked as 17 Exhibit 202.</p> <p>18 (Exhibit 202 marked as requested)</p> <p>19 THE WITNESS: What time was it when we started? You 20 know, was it 9:00 o'clock?</p> <p>21 THE VIDEOGRAPHER: 9:08.</p> <p>22 MR. NELSON: Q So can you identify Exhibit 202 for 23 me?</p> <p>24 A It says Expert -- it looks like my expert</p>	<p style="text-align: right;">Page 44</p> <p>1 transferred, and then Lancium began to use that 2 technology in their products without attribution. That's 3 a loose summary.</p> <p>4 Q And when you say they had a meeting, you're 5 talking about the group dinner that Mr. Storms, 6 Mr. McNamara, and six other people attended?</p> <p>7 A My understanding is that there were a time 8 period where there was interaction. It wasn't just 9 necessarily a face-to-face meeting. It was a 10 face-to-face meeting -- at least one face-to-face 11 meeting, as well as emails, as well as other types of 12 interaction. I mean, I think Mr. Storms provided some 13 critical information to Lancium via email, so that was 14 part of that interaction period.</p> <p>15 MR. NELSON: Objection to form. Nonresponsive.</p> <p>16 Q My question simply was about you characterized 17 it as a meeting, a face-to-face meeting.</p> <p>18 MR. RICORDATI: Objection.</p> <p>19 MR. NELSON: Q That face-to-face meeting was, in 20 fact, a dinner with -- attended by 8 people at a 21 restaurant after a happy hour, isn't that right?</p> <p>22 MR. RICORDATI: Objection. Mischaracterizes the 23 testimony.</p> <p>24 THE WITNESS: I don't think I said face-to-face</p>
<p style="text-align: right;">Page 43</p> <p>1 report dated April the 5th. It's the same as this one.</p> <p>2 Q Okay. Can you look at the last page? Is that 3 your signature?</p> <p>4 A Yes.</p> <p>5 Q Does that --</p> <p>6 A It's thinner than this one. Is that because 7 it's printed double sided? Yeah.</p> <p>8 Q Yeah. I'll represent that to the best of my 9 knowledge it's a complete copy. I think it's just 10 printed double sided.</p> <p>11 A Okay.</p> <p>12 Q It may not have the two Exhibit 1s and 13 Exhibit 2 on there.</p> <p>14 A Okay.</p> <p>15 Q Does Exhibit 202 contain your opinion -- your 16 initial set of opinions for this case?</p> <p>17 A Yes.</p> <p>18 Q Without looking at the report, can you 19 summarize what those opinions are?</p> <p>20 A Without looking at the report. Can I summarize 21 what the opinions are? The opinions are that Austin 22 Storms and Bearbox had some technology and -- that was in 23 advance of the technology that Lancium possessed, they 24 had a meeting, and some of that technology knowledge was</p>	<p style="text-align: right;">Page 45</p> <p>1 meeting. I think I said that there was a meeting and 2 then there was a period of interaction. The meeting may 3 have been the first part of the period of interaction.</p> <p>4 Typically meetings get set up with prior interaction. So 5 there had to have been some period of interaction that 6 set up the meeting which -- the dinner, let's say. So 7 there had had to have been some sort of interaction that 8 set up the dinner and then there was interaction that 9 followed up the dinner. So there was a period of 10 interaction that was at least one face-to-face meeting as 11 well as electronic interactions.</p> <p>12 MR. NELSON: Q And I want to focus -- I understand 13 your opinion is that this is all sort of one event and 14 that's --</p> <p>15 A It's not one event. It's --</p> <p>16 Q I want --</p> <p>17 A A period of interactions.</p> <p>18 Q I want to focus on the meeting first. You 19 characterize it as a meeting. My question is, what you 20 characterize as a meeting was a dinner at a steak place 21 after a happy hour attended by 8 people, correct?</p> <p>22 A That was -- that sounds like it was one of the 23 period -- one of the interactions in that period, yes.</p> <p>24 Q I'm asking you was that the meeting that -- You</p>

<p style="text-align: right;">Page 46</p> <p>1 used the term meeting, and that meeting was in fact a 2 dinner of 8 people -- a dinner attended by 8 people at a 3 steak house after a happy hour, correct? 4 MR. RICORDATI: Objection. Mischaracterizes the 5 testimony. 6 THE WITNESS: I believe there was a conference where 7 they -- It's not clear to me if they had interacted 8 before they met at the conference or if they met at the 9 conference and then continued interacting, but there was 10 at least one meeting that was associated with that 11 conference. Whether it was a dinner, whether it was at 12 the conference on the exhibit floor, whatever, there was 13 at least one face-to-face meeting in there. I know that 14 there was a dinner. I'm aware that there was a dinner. 15 MR. NELSON: Q Do you know whether Mr. Storms and 16 Mr. McNamara met -- first met at a happy hour following 17 the conference? 18 A I don't know when they first met. 19 Q Did you -- Let me ask you this. When you 20 prepared your report, did you talk to Mr. Storms as part 21 of the preparing your report? 22 A Yeah, a little bit. 23 Q When did you talk to him? 24 A Right at the beginning -- right at the</p>	<p style="text-align: right;">Page 48</p> <p>1 be specific with it. Is -- in getting those 2 clarifications, did you rely on those clarifications in 3 preparing your report? 4 MR. RICORDATI: Objection. Asked and answered. 5 THE WITNESS: I rely on them in -- I would have 6 relied on them only to clarify something that was a 7 sequencing issue or, you know, what does this mean, you 8 know, what is this term -- what is this variable 9 describing. 10 MR. NELSON: Q So the answer is yes in the context 11 of getting the clarification, you would you then use that 12 clarification in preparing your report, is that fair? 13 MR. RICORDATI: Objection. Mischaracterizes the 14 testimony. 15 THE WITNESS: I don't say it's used the 16 clarification in preparing the report. It might have 17 used the clarification in dismissing something that was 18 not germane to the report or didn't have anything to do 19 with the issue that I was looking at right at that time. 20 So I'm not exactly sure how to answer that question 21 because rely on -- did I use it? Yeah. I might have 22 used it dismiss something. But did I rely on it to put 23 something in the report as a result? Only to -- only to 24 the extent it helped clarify -- helped validate what I</p>
<p style="text-align: right;">Page 47</p> <p>1 beginning before we started -- we also talked to him a 2 little bit about some clarifications of some of the 3 source code. I mean, there was several different 4 interactions over about a three-month period. 5 Q And in the context of your conversations with 6 him, did you rely on anything from those conversations 7 for preparing your expert report? 8 A Say that again. 9 Q In the -- You had several conversations with 10 Mr. Storms in the context of preparing this report, 11 correct? 12 A Yeah. They were mostly around clarification of 13 what's in the source code or clarification of what's in 14 one of the documents. 15 Q And my question is, is in preparing your 16 report, did you rely on the information provided by 17 Mr. Storms? 18 A No, I relied on the information that was in the 19 documents. 20 Q So you did -- 21 A I had to get some clarification from him 22 regarding how these went together or what sequence they 23 came in. 24 Q And -- I guess my question is -- I'm trying to</p>	<p style="text-align: right;">Page 49</p> <p>1 was seeing. 2 MR. NELSON: Q What specific variables did you 3 request clarification on? 4 A I don't recall. 5 Q Did you write the legal principles that are in 6 this report? 7 A No, those were provided to me to understand. 8 Q Did you rely on any legal principles other than 9 what's in the report in forming your opinion? 10 A I'm not a lawyer. 11 Q That wasn't my question. My question was, 12 other than the legal principles set forth in this initial 13 report, Exhibit 202, did you rely on any other legal 14 principles? 15 A No. I mean -- 16 Q They're in the report? 17 A Yeah. 18 Q Wasn't a trick. Just trying -- 19 A I don't know any other legal principles. I'm 20 not a lawyer. 21 Q Let me have you turn to your report real quick, 22 Exhibit 202. Go to paragraph 6. Paragraph 6 says: 23 Multiple methods were used to analyze the relevant 24 technologies.</p>

<p style="text-align: right;">Page 50</p> <p>1 Do you see that?</p> <p>2 A Uh-huh.</p> <p>3 Q What multiple methods were used?</p> <p>4 A Well, to analyze documents, you read the</p> <p>5 documents. To review source code, you read the source</p> <p>6 code, and then in some cases, you try to run it.</p> <p>7 Q Did you try to run the source code here?</p> <p>8 A There's a couple things that I took pieces of</p> <p>9 and tried to run them and make sure they made sense.</p> <p>10 Q What were those?</p> <p>11 A I don't -- It was -- I don't even recall</p> <p>12 offhand. I'd have to look -- I'd have to look back in my</p> <p>13 notes to see if I even recorded what was being looked at</p> <p>14 at the time, but analyze relevant technologies and items</p> <p>15 in development. I mean, it's a matter of reading a</p> <p>16 document or looking at a picture and reviewing source</p> <p>17 code. And reviewing source code is not reading a</p> <p>18 document. It's a different kind of analysis process.</p> <p>19 Q What do you characterize reading or source code</p> <p>20 review to be that's different than reading a document?</p> <p>21 A Well, when you're reading source code -- I'm</p> <p>22 talking about in general --</p> <p>23 Q I'm talking about source code here.</p> <p>24 A Okay. With this source code, sometimes, you</p>	<p style="text-align: right;">Page 52</p> <p>1 source code not Bates labeled and there was source code</p> <p>2 Bates labeled.</p> <p>3 Q And do you recall the modules you tried to run?</p> <p>4 A No. I didn't try to run modules.</p> <p>5 Q Well, what would you characterize -- What's the</p> <p>6 correct word for what you tried to run?</p> <p>7 A Pieces. Pieces.</p> <p>8 Q So -- You don't recall the -- What was -- Do</p> <p>9 you recall the functionality of the pieces you tried to</p> <p>10 run?</p> <p>11 A No.</p> <p>12 Q Did it work?</p> <p>13 A No because I wasn't trying to do it in the</p> <p>14 context of -- Well, I mean, it worked in my context. It</p> <p>15 wasn't -- didn't work in this context. I didn't try to</p> <p>16 execute this source code for the function for which it</p> <p>17 was made.</p> <p>18 Q When you said it executed in your context, what</p> <p>19 do you mean?</p> <p>20 A Well, you look at the source code and go,</p> <p>21 that's an interesting way to try to do that, let's see if</p> <p>22 it works a different way. If I can make it more</p> <p>23 efficient or if I can apply it in a different context.</p> <p>24 Right. Sometimes the source code that he had was not</p>
<p style="text-align: right;">Page 51</p> <p>1 know -- you have a notebook and you're going through the</p> <p>2 source code and you kind of draw a picture or you make</p> <p>3 notes about well online something, something this did</p> <p>4 this, and then you go to some other part of the source</p> <p>5 code and, oh, that relates to that and you draw an arrow.</p> <p>6 It's just an analysis of -- Source code is not something</p> <p>7 that you read like you read a text. It's something you</p> <p>8 parse apart because it's functional. Right.</p> <p>9 It's much closer to -- it's much closer to</p> <p>10 looking back and forth between footnotes and references</p> <p>11 in a document than it is just reading a document. So</p> <p>12 that's why it's source code review rather than reading</p> <p>13 source code. That's my point.</p> <p>14 Q Other than -- Let's go back. You said you</p> <p>15 tried to run some of the source code. Why did you do</p> <p>16 that?</p> <p>17 A Because I thought it was interesting.</p> <p>18 Q What was the format it was provided to you in</p> <p>19 to try to run it?</p> <p>20 A It was provided -- it was provided in -- I</p> <p>21 think it was provided in native Python format as well as</p> <p>22 PDF with Bates labels. There was two separate</p> <p>23 categories. Remember, I talked about the web thing with</p> <p>24 the category. There's one category with -- there was</p>	<p style="text-align: right;">Page 53</p> <p>1 real well formed, so it would -- just kind of like a</p> <p>2 mental exercise, that's an interesting -- that's kind of</p> <p>3 an interesting way to do that, let's see if there's a</p> <p>4 better way.</p> <p>5 Q So other than document review and source code</p> <p>6 review, did you use any other methods in analyzing the</p> <p>7 materials from this case?</p> <p>8 A Not that I recall. I don't believe so.</p> <p>9 Q Looking at paragraph 7, it says your source</p> <p>10 code review involved analyzing the structure and design</p> <p>11 of the Bearbox technologies, including identifying</p> <p>12 architectural and functional elements of the Bearbox</p> <p>13 product suite which contains technologies, protocols, and</p> <p>14 architectures or which exhibits functions, behaviors, or</p> <p>15 structures that may infringe on corresponding aspects of</p> <p>16 the subject patents.</p> <p>17 Do you see that?</p> <p>18 A Yes.</p> <p>19 Q So what are the architectural things you're</p> <p>20 identifying there?</p> <p>21 A Well, architectures means what are the large</p> <p>22 scale functional chunks. Right. So there's a database,</p> <p>23 oh, we're going to interface with the database. That's</p> <p>24 an architectural chunk. We're going to interface with</p>

<p style="text-align: right;">Page 54</p> <p>1 something that's across the network. That's a different 2 architectural chunk. We're going to loop through these 3 things. Oh, okay. That's a different -- just like what 4 are the different zones or levels of functionality. 5 Q How does that compare to the functional 6 elements? 7 A Architecture is a collection of functional 8 elements typically. So an architecture is an area of 9 source code or a relationship between functional elements 10 that may be doing something similar or doing something 11 that's somehow interrelated. 12 Q So you say the Bearbox product suite. What is 13 that? 14 A That's the collection of the code. 15 Q Anything else or just the code? 16 A Well, it's the code -- it's the code and the 17 functionality of the code, right. Bearbox also -- part 18 of their product was -- part of their product suite was 19 the cage and the PDUs that were being controlled by the 20 code. 21 Q When you say cage, what do you mean? 22 A It was a box. 23 Q You're talking about a mining container? 24 A A rack, yeah.</p>	<p style="text-align: right;">Page 56</p> <p>1 to save cabling. Some PDUs monitor themselves. They 2 have temperature sensors, they typically have fans, they 3 see if they get too hot and they turn their own fan on. 4 They monitor the incoming power and can shut things off 5 if the power fluctuates in certain ways. So it depends 6 on the intelligence built in the PDU. A PDU is a bulk -- 7 accept bulk power, split it out. You can create some 8 intelligence in that process depending on 9 characteristics. 10 Q And how is that intelligence created? 11 A It depends on the -- depends on the vendor of 12 the PDU or the functionality of the PDU. 13 Q And the -- We call those intelligent PDUs. Has 14 that been around for a long time? 15 A In different markets. Right. Like in the 16 telecom market, there's very sophisticated power 17 distribution devices. For example, in events telecom 18 compute -- ADC, it's a standard architecture for bladed 19 systems to fit in. It has a very complicated power 20 distribution setup that has onboard and offboard 21 intelligence to control the power that's distributed to 22 monitor the power that's distributed, to make sure if 23 this device needs 12 volts that it's always getting 12 24 volts to make sure the voltage doesn't fluctuate. I</p>
<p style="text-align: right;">Page 55</p> <p>1 Q Mining container with the racks in it -- 2 A The PDUs and wiring and stuff. 3 Q And when you say rack, you mean just like 4 almost like a shelf that miners fit into? 5 A A place to put a computer. 6 Q When you say PDUs, what do you mean? 7 A Power distribution unit. 8 Q And what are those? 9 A Power distribution unit is something that's 10 used in a -- in a IT context where bulk power comes in. 11 It typically at that point is converted to DC, sometimes 12 it's just split, and then there's controls on every 13 outgoing link to different devices. 14 Q And -- 15 A It monitors itself. 16 Q Is a power distribution unit -- is that 17 something specific to this case, or is that something -- 18 A No, that's common. 19 Q That's a common thing. 20 You said the PDUs modify -- monitor themselves. 21 How do they do that? 22 A PDUs is a -- The concept of a PDU is a very 23 broad area of technology. So PDU in general is a device 24 that accepts bulk power and then splits it out typically</p>	<p style="text-align: right;">Page 57</p> <p>1 mean, the intelligence of the PDU is typically 2 application dependent. 3 I mean, there are also PDUs. I mean, A power 4 strip is a -- a conventional power strip that you plug 5 into the wall that -- you plug it into one plug and it 6 has six plugs, that's a PDU, a type of stupid PDU. 7 Q If you turn to paragraph 9 of your report. You 8 have a -- you start that with, I understand that Bearbox 9 and Austin Storms developed a system, and then you go on 10 to explain some of the pieces of that. Do you see that? 11 A Uh-huh. 12 Q What -- what -- So is your description there in 13 that first sentence, is that your understanding of what 14 Mr. Storms' system was? 15 A The first sentence of paragraph 9? 16 Q Of paragraph 9. 17 A I understand that Bearbox and Austin Storms 18 developed a system that utilizes a set of bitcoin miners 19 under the direction of a control system that uses these 20 various things. Yes, it's a vertically integrated 21 system. 22 Q And your view of his system, could a system be 23 just one minor or did it have to be more than one miner? 24 A I think his thing was -- was set up to have</p>

<p style="text-align: right;">Page 58</p> <p>1 multiple miners, but it could scale down or up.</p> <p>2 Q Is it your understanding he physically built</p> <p>3 this system with multiple miners?</p> <p>4 A I don't know. I don't know if he physically</p> <p>5 built and deployed the system. I know that he simulated</p> <p>6 it, and I think he had -- I know that he had -- based on</p> <p>7 the documents that were provided, it seems like he had</p> <p>8 prototyped a custom PDU device for a chassis and was able</p> <p>9 to control it.</p> <p>10 Q When you say a chassis, what do you mean --</p> <p>11 A Chassis, cage, rack, collection -- a thing that</p> <p>12 contains a whole bunch of computers.</p> <p>13 Q So let me ask it then because I'm not sure I</p> <p>14 understood your answer. So my question was whether a</p> <p>15 system that utilized -- you say that Mr. Storms developed</p> <p>16 a system that utilizes a set of bitcoin miners under the</p> <p>17 direction of a control -- of a control system then, and</p> <p>18 you go on. My question is, in your use of the term</p> <p>19 system there that you utilizes a set of bitcoin miners,</p> <p>20 would you consider it a system if it utilized only a</p> <p>21 single miner?</p> <p>22 A Yeah. It would be a system that had an</p> <p>23 arbitrary number of miners as well as API calls, custom</p> <p>24 PDU logic, fan control, logic to process the information,</p>	<p style="text-align: right;">Page 60</p> <p>1 the one primary ones that have the whole thing in there,</p> <p>2 but I'd have to look at the source code to be absolutely</p> <p>3 sure. I can probably look at the summary of the source</p> <p>4 code in the appendix.</p> <p>5 Q So in your view fine grain load control then is</p> <p>6 more than simply turning miners on and off?</p> <p>7 MR. RICORDATI: Object to the form.</p> <p>8 THE WITNESS: Well, fine grain load control is</p> <p>9 control of the load at something more than just a gross</p> <p>10 level.</p> <p>11 MR. NELSON: Q Let's suppose that the load is a</p> <p>12 group of bitcoin miners. If you had a control system</p> <p>13 that turned those bitcoin miners on or off in response to</p> <p>14 some variable, is that fine grain load control?</p> <p>15 MR. RICORDATI: Object to form.</p> <p>16 THE WITNESS: I think that would have to be defined</p> <p>17 more specifically because you could have fine grain in</p> <p>18 terms of time, right. So you can turn something on and</p> <p>19 off, and that's gross load control in terms of throughput</p> <p>20 maybe, but if you do it really rapidly, it's fine in</p> <p>21 terms of time. So fine grain has two dimensions, more</p> <p>22 than two dimensions probably, but two really obvious</p> <p>23 dimensions.</p> <p>24 MR. NELSON: Q So one is time. What's the other</p>
<p style="text-align: right;">Page 59</p> <p>1 yeah. Doesn't matter how many miners are in there, it's</p> <p>2 still a system.</p> <p>3 Q So you say that part of that is the custom PDU</p> <p>4 logic and fan control to provide fine grain load control</p> <p>5 for the miners. Do you see that?</p> <p>6 A Uh-huh.</p> <p>7 Q What do you understand fine grain load control</p> <p>8 to mean?</p> <p>9 A Well, it's the ability to control a load with</p> <p>10 high resolution in a combination of resolution and time</p> <p>11 and in output; input, output.</p> <p>12 Q And what -- what code do you believe that</p> <p>13 Mr. Storms -- Do you believe Mr. Storms had any code that</p> <p>14 actually accomplished that?</p> <p>15 A Yeah, I think that's contained in the source</p> <p>16 code.</p> <p>17 Q Which pieces?</p> <p>18 A Well, we'd have to look specifically through</p> <p>19 the ones. There's a lot of -- Maybe I can find the</p> <p>20 names. I don't recall offhand, but I think all the ones</p> <p>21 that are arb_main -- arb_main something kind of have the</p> <p>22 entirety of it in there. I'd have to look. I don't</p> <p>23 remember the exact names of the modules, but there's --</p> <p>24 there's test things. There's -- I think arb_mains are</p>	<p style="text-align: right;">Page 61</p> <p>1 one?</p> <p>2 A Outcome or power. You've not power in, you've</p> <p>3 got outcome out.</p> <p>4 Q Okay. So if you had a system that could turn a</p> <p>5 group of bitcoin miners off within 5 minutes of the power</p> <p>6 -- well, if you had a system that could turn a group of</p> <p>7 miners off and on within 5 minutes of the power reaching</p> <p>8 a certain price point, is that fine grain load control?</p> <p>9 MR. RICORDATI: Object to form.</p> <p>10 THE WITNESS: Within -- turn the group of miners as</p> <p>11 in total on and off?</p> <p>12 MR. NELSON: Q Yes.</p> <p>13 A Within 5 minutes?</p> <p>14 Q Of a price reaching a certain point -- power</p> <p>15 price reaching a certain point.</p> <p>16 A That would be stretching it. That's not fine</p> <p>17 -- In my mind that's kind of gross control.</p> <p>18 Q Okay. Well, then what would you need to add to</p> <p>19 that hypothetical to make it fine grain load control?</p> <p>20 MR. RICORDATI: Object to form.</p> <p>21 THE WITNESS: Well, the within 5 minutes problem --</p> <p>22 the within 5 minutes is a problem because that's really</p> <p>23 bad lag. Being able to address the miners in groups</p> <p>24 would create a form of finer grain control rather than</p>

<p style="text-align: right;">Page 62</p> <p>1 all of them at once. One at a time or two at a time or 2 just the top ones or just the bottom, that would be a 3 fine grain control. Being able to do it -- in different 4 groups and at different times would be a different 5 resolution of the finer grain. 6 You have a collection of things, and those 7 things are individually using power and producing output. 8 So if you control those things individually or in groups, 9 that's a form of -- that's one dimension of finer grain. 10 Right. If you can control -- on and off, control, that's 11 one form of finer grain. If you can reduce their 12 consumption of power, that's a different form of finer 13 grain. If you can turn them off in different sequence at 14 different times, that's a different dimension of finer 15 grain. We're talking about a multi-dimensional 16 partitioning here, and being able to partition in smaller 17 pieces is the essence of finer grain. 18 MR. NELSON: Q So going back to paragraph 9, 19 number 3 says the system include custom logic to process 20 the information and periodically term mining 21 profitability. 22 Do you see that? 23 A Uh-huh. 24 Q What do you mean by us custom logic there?</p>	<p style="text-align: right;">Page 64</p> <p>1 that all of the custom logic exists inside the code, but 2 there is custom logic inside the code that performs this 3 application. 4 MR. NELSON: Q Well, if there's custom logic that 5 exists outside the code in this case, what is it? Where 6 does it exist? 7 A Well, it would be the way that the system was 8 put together, the way the wires are run. That's -- not 9 really logic, but it's system construct. 10 Q So I'm asking specifically about what you mean 11 by custom logic. You said that there's custom logic 12 embedded in the code or as part of the code, and then you 13 seem to say that there was custom logic outside of the 14 code. 15 A Well, I was saying there's custom application 16 specific construction, let's say. 17 Q That's not my question. 18 A Logic -- 19 Q My question is, custom logic, does that exist 20 outside the code? 21 A Custom PDU logic and fan control -- if you 22 constrain this to custom PDU logic and fan control, it 23 would exist in the code that controls and manages the 24 PDUs and the fans.</p>
<p style="text-align: right;">Page 63</p> <p>1 A Well, custom logic is logic that's specific to 2 the application. So it's application specific logic or 3 logic that's been developed for a particular purpose. 4 And in this case the logic that's developed for a 5 particular purpose processes information that's coming in 6 and on some schedule makes a determination. 7 Q What is that logic? I mean, specifically in 8 this case, what is that logic that Mr. Storms -- that you 9 allege Mr. Storms has? 10 A That's the logic that's embodied in the Python 11 code. 12 Q All of the Python code or particular modules of 13 it? 14 A It would be particular places and particular 15 modules. 16 Q Is that logic anything else or is it the logic 17 that's embodied in the code? 18 MR. RICORDATI: Object to form. 19 THE WITNESS: Well, the code -- the code is an 20 implementation of the application purpose. So the code 21 -- the application purpose gets translated into the code. 22 So the code is an embodiment of the application purpose. 23 There may be other things that are outside the code that 24 also participate in the application. So it's -- it's not</p>	<p style="text-align: right;">Page 65</p> <p>1 Q So you've got custom logic in the Python code 2 in number 3, and then you've got custom PDU logic and fan 3 control. Is there any other custom logic that exists in 4 this system in your view? 5 A I have to think about that. There's logic 6 involved in the construct of the container -- 7 Q Not asking about logic. I'm asking about 8 custom logic as you used those words. 9 A Well, if we -- if we phrase custom logic as 10 having to do with the Python code, then the custom logic 11 and the Python code is the only thing that processes the 12 information and determines mining profitability. The 13 custom PDU logic and fan control, I know that the Python 14 code interfaces with the PDUs and can turn them on and 15 off and change the fan speed, but there may -- seems like 16 -- I'd have to review that. I think -- I think the -- 17 without -- without further diving into the details of the 18 system implementation, I think it's fair to say that this 19 is focused on the logic that's within the Python code 20 that controls the PDUs and fans to control the load for 21 the miners, as well as the logic that processes the 22 option information and determines mining profitability. 23 Q So the last sentence says: Based on 24 conditions, the system may either instruct some or all of</p>

<p style="text-align: right;">Page 66</p> <p>1 the miners to mine bitcoin or sell power to the grid, 2 parentheses, power arbitrage, closed parentheses. 3 Do you see that? 4 A Yes. 5 Q Did Mr. Storms' system actually do that? 6 A Mr. Storms' system was a prototype. I don't 7 know if it was ever grid tied. I don't believe it was. 8 I believe it was all prototype, but it had all the logic 9 in there to instruct miners to mine bitcoin or to sell 10 power back. 11 Q So when you say prototype, I think the word you 12 use in the reply report is simulation. Are you using 13 prototype and simulation same -- 14 A Same thing. 15 Q Okay. So can you explain how the simulation 16 allegedly performed power arbitrage or simulated power 17 arbitrage? 18 A Sure. There was an incoming power price. If 19 the bitcoin -- there's incoming power price, and there 20 was incoming bitcoin information -- power information and 21 bitcoin information, and then based on the projected 22 output of the bitcoin miners, you can figure out how much 23 money you're going to make by mining bitcoin, or you can 24 figure out how much money you're going to make by not</p>	<p style="text-align: right;">Page 68</p> <p>1 Q And my question was, the code did not have the 2 ability to sell power back, correct, because it never had 3 such a business relation arrangement? 4 A I don't believe it was ever grid tied, and I 5 don't believe it was ever tied to a scheduling entity. 6 So I don't think the business arrangement ever existed 7 because it was a simulation or a prototype. 8 Q Did -- So your viewpoint is that Mr. Storms' 9 collection of code could work either from the grid -- 10 from the generator side or from the load side? 11 MR. RICORDATI: Objection. Mischaracterizes the 12 evidence. 13 THE WITNESS: I don't think -- I think his system 14 could have worked in a variety of orchestrations. 15 MR. NELSON: Q So the answer is yes, you think it 16 could have worked -- Well, let me ask you -- the system 17 that -- Well, first of all, let's get our terminology 18 straight. 19 If we're talking about Mr. Storms' system, what 20 do you understand that to be? 21 A Mr. Storms' system was the enclosure, the power 22 distribution units, and the logic to control the power 23 that that system would consume and make a tradeoff 24 between how much bitcoin that thing could mine versus</p>
<p style="text-align: right;">Page 67</p> <p>1 mining bitcoin and selling the power back. 2 Q And so from -- from the perspective -- the 3 perspective of this arbitration, was it being done from 4 the perspective of the load or from the perspective of 5 the generator, or something else? 6 A I'm not sure I understand the question. Was it 7 -- it was being done from the perspective of controlling 8 the load? 9 Q Well, if you're the load, how do you sell power 10 back? 11 A You have an arrangement with the power market 12 to not use the power that you have contracted for and 13 they buy it back. 14 Q And did Mr. Storms' system have such an 15 arrangement with the power -- his simulation have such an 16 arrangement? 17 A The simulation doesn't need that kind of 18 arrangement. That's a business arrangement that's 19 outside of the computer simulation. 20 Q So the answer is no, the simulation didn't have 21 that arrangement, right? 22 A It had the ability to designate -- to designate 23 times at which power would have been sold back through a 24 business arrangement if that existed.</p>	<p style="text-align: right;">Page 69</p> <p>1 selling the power back that it would have consumed. 2 Q So physically what did Mr. Storms' system 3 consist of? 4 A Physically -- the cage, the construction -- the 5 structure, the power distribution units, the wiring. It 6 would have been the place to put the miners, as well as 7 the logic -- the control system and the logic that 8 control the miners and control the distribution of power. 9 Q Did the system also include miners? 10 A I think the way he was planning to sell it, it 11 was just the control system, not the miners. I remember 12 -- I remember one of the -- one of the disclosed 13 documents has a pricing thing that's everything except 14 the miners, so it's just the control system and the 15 framework. 16 Q So the simulation ran on a miner, did it -- The 17 simulation used a miner, didn't it? 18 A The simulation was for the control system. 19 Q Did it not use a miner? 20 A It interfaced with miners. 21 Q Was -- Did it turn a miner on and off? 22 A Uh-huh. 23 Q Did it turn multiple miners on and off? 24 A Yeah, it was to address --</p>

<p style="text-align: right;">Page 70</p> <p>1 Q I didn't ask was it able to. I'm asking if did 2 it. Did it turn more than one miner on or off? 3 A I'd have to look specifically at the code. I 4 believe it was capable of doing that. 5 Q My question is, do you know whether the system 6 did in fact turn more than one miner on and off? 7 MR. RICORDATI: Asked and answered. 8 THE WITNESS: If it had been deployed, would it have 9 turned miner on or off, is that what you're asking? 10 MR. NELSON: Q I'm asking as, you know -- the 11 system ran on a simulation is my understanding. And -- 12 A Okay. 13 Q As it was running did it turn a miner on or 14 after? 15 A I don't know if he ran it with a miner attached 16 to it. You're asking me if something happened at a 17 particular point in time that had a miner attached to it. 18 I can't speak to that. I have reviewed the code and I 19 think it has the capability of doing that. I don't know 20 if it was actually done because I wasn't there, and I 21 didn't review that part of the thing. I reviewed the 22 code, and the code certainly has that capability. 23 Q All right. So you don't know whether the 24 system actually turned a miner on or off?</p>	<p style="text-align: right;">Page 72</p> <p>1 THE VIDEOGRAPHER: The time is 10:38 p.m. This is 2 the end of media unit 1. We're going off the video 3 record. 4 (Off the record) 5 THE VIDEOGRAPHER: The time is 10:47 a.m. This is 6 the beginning of media unit 2, and we're back on the 7 video record. 8 MR. NELSON: Q So, Mr. McClellan, can you turn to 9 paragraph 14 of your report. The first sentence says: 10 Based on my review and analysis as summarized above, my 11 opinion is that Bearbox was in possession of the 12 technologies recited in the asserted claims either 13 literally or under the doctrine of equivalents and other 14 trade secrets relating to power arbitrage prior to 15 meetings with Lancium. And then it goes on. 16 Do you see that? 17 A Uh-huh. 18 Q So what aspect of the claims was Bearbox 19 allegedly in possession of under the doctrine of 20 equivalents in your use of the words there? 21 A Are you specifically asking about doctrine of 22 equivalents? 23 Q Yes. 24 A I have to go back and review exactly what</p>
<p style="text-align: right;">Page 71</p> <p>1 A That's not part of my role in this analysis is 2 to determine what happened at a particular time. 3 Actually turning a miner on and off is something that 4 happens at a particular point in time. 5 Q My question is simply -- 6 A He may have not. 7 Q So you don't know? 8 A I don't know if he ever connected a miner to it 9 or not. I assume that he did, but I don't know. The 10 code certainly has that capability. 11 Q I assume your answer is the same to whether or 12 not he ever connected multiple miners to his system, you 13 don't know one way or the other? 14 A It doesn't really matter to me because the code 15 certainly has that capability. 16 Q So the answer is you don't know? 17 A I don't know what he did at any point in time 18 before I was attached to the case, correct. 19 We've been going for an hour and a half. Can 20 we take a break? 21 MR. NELSON: We can take a break. 22 THE WITNESS: My 60-year-old bladder can only go so 23 far. 24 MR. NELSON: No problem.</p>	<p style="text-align: right;">Page 73</p> <p>1 doctrine of equivalents means. These legal terms -- 2 Q I think you can -- You can look at paragraph 39 3 perhaps for that if you need to. 4 A So under the doctrine of equivalents if a 5 limitation of an asserted claim is not literally present 6 in an accused instrumentality, an equivalent component or 7 step may be identified instead. A component or step is 8 equivalent when there's an insubstantial difference 9 between the component and the claim limitation. So the 10 test is substantially the same function and substantially 11 the same way to achieve substantially the same result. 12 Q Right. And my question is, what aspects of the 13 asserted claims do you believe Bearbox was in possession 14 of under the doctrine of equivalents as opposed to 15 literally? 16 A I would have to go through the claim elements 17 item by item. And you want to know which ones were 18 literal and which ones were equivalent? We have to go 19 through the claim elements item by item. 20 Q Okay. Is that done in your report or not? 21 A I don't know if it's done in the report, if it 22 identifies whether it's doctrine of equivalents 23 specifically or not. I don't recall the specifics. 24 Q When you say the -- various parts of your</p>

<p style="text-align: right;">Page 74</p> <p>1 report you say the system was capable of something. Do 2 you remember that?</p> <p>3 A Uh-huh.</p> <p>4 Q Is that doctrine of equivalents or is that 5 something else?</p> <p>6 MR. RICORDATI: Object to form.</p> <p>7 THE WITNESS: Well, like we were talking a minute 8 ago, I don't believe that the Bearbox system was ever 9 connected to -- was ever grid connected. So it was 10 capable of being grid connected, but it was not.</p> <p>11 MR. NELSON: Q Yeah. But my question is -- Thank 12 you for that. But my question is more broad because I'm 13 trying to figure out what aspects of the Bearbox 14 technology you believe are in the asserted claims under 15 the doctrine of equivalents, and I don't see in your 16 report where you specifically call that out. What I do 17 see in your report is various places where you say the 18 system was capable of meeting a particular claim 19 limitation. And my question was, when you say it's 20 capable of meeting a claim limitation, is that your 21 analysis under the doctrine of equivalents or is it 22 something else?</p> <p>23 MR. RICORDATI: Object to form.</p> <p>24 THE WITNESS: Well, capable of meeting a claim</p>	<p style="text-align: right;">Page 76</p> <p>1 A If we look back at the definition of doctrine 2 of equivalents it does substantially the same thing in 3 substantially the same way, then it's equivalent.</p> <p>4 Q So that in your view then if something in 5 Mr. Storms' system didn't meet the claim limitation 6 exactly, but it did something similar in the same way, it 7 would be sufficient for the inventorship analysis?</p> <p>8 MR. RICORDATI: Objection. Calls for a legal 9 conclusion.</p> <p>10 THE WITNESS: I don't know if I'm capable of -- like 11 the objection says, providing a legal conclusion on that. 12 If the claim limitation says -- gives a certain type of 13 functionality, and the functionality of the system is 14 substantially the same or has the same form or produces 15 the same outputs, then there's an equivalency there.</p> <p>16 MR. NELSON: Q Okay. And my understanding is -- 17 I'm trying to understand your opinions. In that scenario 18 would you say then -- So suppose that Mr. Storms -- you 19 maintain Mr. Storms communicated on a claim element to 20 Mr. McNamara and that Mr. Storms' system was equi -- for 21 that claim element Mr. Storms' system was equivalent to 22 the claim -- the claim element in the '433 patent. Under 23 that scenario, would you maintain then that Mr. Storms 24 had met that claim element for the purposes of</p>
<p style="text-align: right;">Page 75</p> <p>1 limitation means that it was capable of meeting that 2 claim limitation whether it specifically was tested under 3 those circumstances or not, like, for example, with the 4 -- with being grid tied.</p> <p>5 MR. NELSON: Q So am I understanding your answer 6 correctly then is that just because you use the word 7 capable of it does not mean it was doctrine of 8 equivalents analysis or it does?</p> <p>9 A I'm not exactly sure how to answer that. If it 10 was capable of doing something, then it had the ability 11 to do that, if it was deployed in that fashion. I'm not 12 exactly sure how that relates to doctrine of equivalents. 13 I'd have to look at that and noodle on that for a while.</p> <p>14 Q What's your understanding of the role of 15 doctrine of equivalents in establishing inventorship?</p> <p>16 MR. RICORDATI: Objection. Calls for a legal 17 conclusion.</p> <p>18 THE WITNESS: I'm not a lawyer.</p> <p>19 MR. NELSON: Q I'm asking you if you have an 20 understanding. What is your understanding as somebody 21 who put in an expert in this case -- or expert report in 22 this case that uses doctrine of equivalents what your 23 understanding is of that in the context of your 24 inventorship opinions?</p>	<p style="text-align: right;">Page 77</p> <p>1 inventorship? Is that your opinion is what I'm trying 2 get at?</p> <p>3 A That sounds reasonable.</p> <p>4 Q What do you understand -- So going back to 5 paragraph 39. What do you understand insubstantial 6 difference to be?</p> <p>7 A I've got to find 39. What do I understand what 8 -- a substantial difference or insubstantial difference?</p> <p>9 Q 39 is more -- is the legal doctrine of 10 equivalents section, correct?</p> <p>11 A Right.</p> <p>12 Q And one of the -- one of the terms there that 13 is used is insubstantial difference. Do you see that?</p> <p>14 A Right.</p> <p>15 Q What do you understand an insubstantial 16 difference to be?</p> <p>17 A Well, literally that's a difference that's not 18 substantial. It's not a -- not a meaningful difference.</p> <p>19 Q An is that the criteria you used in your 20 analysis whether the difference was meaningful or not?</p> <p>21 MR. RICORDATI: Objection. Calls for a legal 22 conclusion.</p> <p>23 THE WITNESS: Well, in -- from my perspective, 24 meaningful has to do with what the function is or what</p>

<p style="text-align: right;">Page 78</p> <p>1 the outcome is or how the process works. But if they're 2 very close, then there's an insubstantial difference. 3 MR. NELSON: Q And did you use that understanding 4 in forming your opinions in the case? 5 A Yes. If the component or step and the claim 6 limitation performs substantially the same function in 7 substantially the same way to achieve substantially the 8 same result, then there is an insubstantial difference. 9 I mean, that's -- 10 Q Would adding a new feature to the code to meet 11 a claim criteria -- would that be an insubstantial 12 difference? 13 MR. RICORDATI: Object to the form. 14 THE WITNESS: Depends on what the feature is, right. 15 If you add a GUI to the code, it's an insubstantial 16 difference for this particular case. 17 MR. NELSON: Q So if I understand your opinion 18 correctly, you used what you define -- what you called 19 the plain and ordinary meaning to a person of ordinary 20 skill in the art when understanding the claim terms. Is 21 that right? 22 A Yeah. 23 Q And is that plain and ordinary meaning at any 24 time or is it at a particular time?</p>	<p style="text-align: right;">Page 80</p> <p>1 ordinary meaning you used your understanding of the terms 2 as of the date of this report, or was it the plain and 3 ordinary meaning at the time Mr. Storms and Mr. McNamara 4 went to dinner, or was it the plain and ordinary meaning 5 prior to that? What time period does your plain and 6 ordinary meaning analysis encompass? 7 A Well, the concept of plain and ordinary meaning 8 has to do with the terminology around the application 9 area, and if the plain and ordinary meaning of the 10 terminology around that application area changes, then 11 you have to adapt to that. I don't notice any changing 12 during this -- during the timeframe of the last 2, 3 13 years that this thing has been in contention. I don't 14 think the plain and ordinary meaning has undergone any 15 large -- of any of the terms in here have undergone any 16 large changes during that timeframe. 17 Q So prior to me asking this question, had you 18 considered the timeframe of the plain and ordinary 19 meaning? 20 A Well, typically plain and ordinary meaning is 21 at the time of analysis. That's the way I typically use 22 it. At the time of the -- Well, if it was a patent that 23 was filed, you know, ten years ago, then you have to 24 think about what the plain and ordinary meaning was at</p>
<p style="text-align: right;">Page 79</p> <p>1 A I'm not sure I understand the question. It's 2 plain and ordinary meaning. 3 Q Well, my question is so -- You can turn to 4 paragraph 49 to give you the context. 5 So you say: I understand that claim terms by 6 default are construed by their plain and ordinary meaning 7 to a person of ordinary skill in the art. For the 8 purposes of my analysis, I have applied the plain and 9 ordinary meaning of the claim terms. 10 Do you see that? 11 A Right. 12 Q And my question is, the plain and ordinary 13 meaning that you have applied, is that in any particular 14 timeframe, or is it just in general? 15 A That seems -- that -- the question makes me 16 uncomfortable because it seems to call for some sort of 17 legal conclusion about what the term plain and ordinary 18 meaning means. Plain and ordinary meaning is just the 19 plain and ordinary meaning to somebody who has ordinary 20 skill in the art. The plain and ordinary meaning of 21 things can change over time as technology changes. 22 Q That's my question. Did you -- did you utilize 23 the plain and ordinary meaning in your view of these 24 terms at any particular time period? Was it plain and</p>	<p style="text-align: right;">Page 81</p> <p>1 the time that the patent was filed and contrast that with 2 what's going on now. 3 Q What timeframe of plain and ordinary meaning 4 did you use in your analysis in this case? 5 A I think I already answered that. It's the 6 plain and ordinary meaning that's -- this is very 7 localized in time. So the plain and ordinary meaning of 8 the terms that are associated with this case are 9 localized in time. There hasn't been a large timeframe 10 change where technology can migrate between them. 11 Q Well, there's been several years. What time -- 12 My question is simple. What time period did you utilize 13 to determine your plain and ordinary meaning, or did you 14 utilize any? 15 MR. RICORDATI: Objection. Asked and answered. 16 THE WITNESS: There's no -- In my opinion for this 17 case, there's no real change in plain and ordinary 18 meaning for the terms that are involved in this patent in 19 this technology. There hasn't been a large time scale 20 where things can evolve and terminology changes. 21 MR. NELSON: Q Did you utilize a particular time 22 period for your plain and ordinary meaning analysis in 23 this case? 24 MR. RICORDATI: Objection. Asked and answered.</p>

<p style="text-align: right;">Page 82</p> <p>1 THE WITNESS: It's the time period around this case</p> <p>2 which, in my opinion, is relatively compact.</p> <p>3 MR. NELSON: Q So the time period from when to</p> <p>4 when then? Give me years.</p> <p>5 A I think the patent was filed in 2019, right?</p> <p>6 The date of the patent filing -- If you look at the</p> <p>7 timeline there's the date when they started -- when</p> <p>8 Storms started to develop stuff, and there's a date when</p> <p>9 Lancium had product, and there's a date where they</p> <p>10 overlapped, then there's a date when the patent was</p> <p>11 filed. All of that timeframe was fairly compact between</p> <p>12 like 2018 and 2020. It's about a two-year period -- two-</p> <p>13 or three-year period in there.</p> <p>14 Q So is that the time period you used, or did you</p> <p>15 use your understanding as you were doing your -- plain</p> <p>16 and ordinary meaning as you were doing your analysis --</p> <p>17 When you were writing your report, what time period did</p> <p>18 you use?</p> <p>19 MR. RICORDATI: Objection. Asked and answered.</p> <p>20 THE WITNESS: The time period of the report is early</p> <p>21 2022 which abuts the time period of the activity of the</p> <p>22 patent and stuff. So it's basically all the same time</p> <p>23 period. I don't know that there's any substantial</p> <p>24 migration or substantial changes in any of the terms that</p>	<p style="text-align: right;">Page 84</p> <p>1 that much power?</p> <p>2 A Typically it's consume because you're a load</p> <p>3 that's not controllable. If you're a controllable load,</p> <p>4 then you're buying that power with the assumption that</p> <p>5 you're going to consume it. If you have ability to sell</p> <p>6 it back, then you can sell it back. But you don't sell</p> <p>7 it back to whoever you bought it from, you sell it into a</p> <p>8 market at that time. It's an agreement with the seller</p> <p>9 to consume, right?</p> <p>10 And consume doesn't mean use. Consume means</p> <p>11 purchase. Whether I use that power to do something with</p> <p>12 or whether I sell that power to somebody else, that's</p> <p>13 separate from the power option agreement.</p> <p>14 Q What's your understanding of a minimum power</p> <p>15 threshold in this case as used in the '433 patent?</p> <p>16 A That's the data that's associated with the</p> <p>17 option agreement.</p> <p>18 Q What specifically is a minimum power threshold?</p> <p>19 A That's the amount of power that you're</p> <p>20 contracted to consume.</p> <p>21 Q And by consume you don't mean use, correct?</p> <p>22 A I may not use it, but I'm going to consume it.</p> <p>23 I'm purchasing it. Whether I use it or whether I sell</p> <p>24 it, that's a completely separate issue. I'm agreeing to</p>
<p style="text-align: right;">Page 83</p> <p>1 are associated with this patent or with this case. If</p> <p>2 there have been -- if there have been, then we need to</p> <p>3 isolate those and make sure that there wasn't any</p> <p>4 misinterpretation of anything.</p> <p>5 MR. NELSON: Q What's your understanding of the</p> <p>6 plain and ordinary meaning of power option agreement?</p> <p>7 A My understanding of power option agreement is</p> <p>8 it's essentially a contract to buy power at a certain</p> <p>9 price. It's like a wholesale purchase. I'm going to buy</p> <p>10 X number of units at X price.</p> <p>11 Q What's your understanding of power option data?</p> <p>12 A Power option data is the data that's associated</p> <p>13 with the power option agreement.</p> <p>14 Q What -- is there any specific data that's</p> <p>15 required to be power option data, or can it be anything?</p> <p>16 A I think at least it has intervals and minimum</p> <p>17 thresholds. There may be other data that's associated</p> <p>18 with that, but I think there's thresholds over intervals.</p> <p>19 Q And intervals are intervals of time?</p> <p>20 A Time intervals, yeah.</p> <p>21 Q And what are thresholds?</p> <p>22 A You agree to buy power at that -- you agree to</p> <p>23 consume that much power at a certain price at that time.</p> <p>24 Q You agree to buy that much power or consume</p>	<p style="text-align: right;">Page 85</p> <p>1 purchase it at that threshold.</p> <p>2 Q So just to be clear so our -- Your use of the</p> <p>3 word consume here means -- it doesn't mean physically the</p> <p>4 data center consumes the power by using it. It also</p> <p>5 could mean that the power is sold back.</p> <p>6 A Consume is a transactional thing. Right. The</p> <p>7 consumption is a transaction where I'm consuming it. I</p> <p>8 have to dispatch that power some way.</p> <p>9 Q What do you understand the term performance</p> <p>10 strategy to mean in the context of the claims of the '433</p> <p>11 patent?</p> <p>12 A A performance strategy is deciding -- is a</p> <p>13 decision based on incoming data and conditions and</p> <p>14 monitored conditions as to how to dispatch the -- how to</p> <p>15 dispatch the power that's been consumed through the PPA</p> <p>16 against bitcoin miners or not.</p> <p>17 Q So in your understanding of performance</p> <p>18 strategy could performance strategy be to not consume</p> <p>19 power?</p> <p>20 A It could be --</p> <p>21 Q I'm sorry. Let me -- I asked a bad question</p> <p>22 because I used the word consume in a different context.</p> <p>23 So in your understanding of the term</p> <p>24 performance -- the meaning of the term performance</p>

<p style="text-align: right;">Page 86</p> <p>1 strategy, could a performance strategy be a decision for 2 the load to not utilize power? 3 A As long as it complies with the minimums, yeah. 4 Q What minimums must it comply with? 5 A The minimum thresholds in the PPA. 6 Q If I understood -- if I understood -- You said 7 PPA. I think the term from the patent is power option 8 agreement. 9 A Yeah. That's -- that's -- 10 Q Are you using the two -- Do you think there's a 11 difference between -- Well, between a PPA which -- What 12 do you understand PPA to be? 13 A I may have just used the wrong term. I meant 14 the contracted purchase of power at a certain rate. 15 Q Do you understand that the term -- do you 16 understand there's such a thing called a power purchase 17 agreement? 18 A Yeah. I've heard of that. 19 Q Do you understand -- 20 A I think they're essentially the same thing, but 21 I'm not exactly sure of the difference. 22 Q That was my next question. Is there a 23 difference or not that you are aware of? 24 A I tend to use them interchangeably, and that</p>	<p style="text-align: right;">Page 88</p> <p>1 A Well, if I purchase one kilowatt at \$1, I'm 2 going to pay that \$1 whether I use that kilowatt or not. 3 Q So the minimum power threshold in that example 4 is the \$1 or the one kilowatt? 5 A The power threshold is the kilowatt. 6 Q The minimum power threshold is the kilowatt? 7 A Uh-huh. 8 Q Then what is the dollar? 9 A That's the price I paid for the kilowatt. 10 Q I'm sorry. I have been misspeaking. Just for 11 the record, I may have said '633 patent a few times. Do 12 we have an understanding that when we've been testifying, 13 I'm using -- the patent in question is the '433 patent. 14 A Right. 15 Q Your testimony was relating to the '433? 16 A Yes, '433 -- the report is relative to the '43 17 patent. 18 Q And my questions -- You understood my questions 19 to be as well? 20 A Yes. 21 Q Thank you. 22 The patent talks about the performance strategy 23 may specify a power consumption target for the load. Do 24 you have an understanding what the power consumption</p>
<p style="text-align: right;">Page 87</p> <p>1 may not be exactly right. 2 Q So going back to minimum power threshold again. 3 Is that -- Do you understand that to be a power threshold 4 to be power that must be utilized in the form of the data 5 center actually operating and physically using the power, 6 or do you understand minimum power threshold to be 7 something else? 8 A I'm not -- I'm not sure of all the specifics of 9 the contractual arrangement. I think that you're going 10 to pay for the power at a minimum power threshold whether 11 you use it or not. 12 Q So in your view -- 13 A I don't know if you have to use it or if you 14 have to pass it through. You may just not use it, but 15 you're going to pay for it no matter what. 16 Q So in your view point then the term minimum 17 power threshold as used in the '633 patent can be a price 18 for power? 19 MR. RICORDATI: Objection. Vague. 20 THE WITNESS: It's the -- it's the threshold at 21 which you're going to pay for power that you've purchased 22 in advance. 23 MR. NELSON: Q What do you mean by threshold in 24 that context?</p>	<p style="text-align: right;">Page 89</p> <p>1 target for the load is? 2 A That's the amount of power that you want the 3 load to consume. 4 Q Going back -- I want to go back to minimum 5 power threshold one more time. So what do you understand 6 the word threshold to mean in minimum power threshold? 7 A In general a threshold is an amount or a value 8 that's called out specifically, and you observe whether 9 you're crossing it, whether you're under it, over it, or 10 crossing it in northbound or a southbound direction. So 11 threshold is a value that's a form of target, but it's 12 not necessarily a form of target that you want to meet. 13 It may be a target that you want to avoid. 14 Q In the context of the '433 patent, is it a 15 target that you want to meet or avoid or both? 16 A It's a minimum threshold, so it's a target that 17 you have to be above. 18 Q If I understand your -- rest of your testimony, 19 it's a target that you have to be above, and you can -- 20 according to your understanding of the plain and ordinary 21 meaning, you can be above that target by either using the 22 power -- physically consuming the power or consuming the 23 power by selling it back, is that correct? 24 MR. RICORDATI: Objection. Mischaracterizes the</p>

<p style="text-align: right;">Page 90</p> <p>1 testimony.</p> <p>2 MR. NELSON: Q Do I understand your testimony</p> <p>3 correctly?</p> <p>4 A Well, I think this is actually a better</p> <p>5 question for Mr. McCamant. The power option agreement is</p> <p>6 an agreement to purchase a certain amount of power at a</p> <p>7 certain time at a certain price. I don't know if you're</p> <p>8 required to dispatch that power or if you can just not</p> <p>9 use it. But I know that you're going to pay that price</p> <p>10 no matter what, because you have got the contract.</p> <p>11 You're contractually obligated to pay for the power at</p> <p>12 that price at that time. I don't know if you have to</p> <p>13 dispatch it.</p> <p>14 Q Well, you are the person who is providing</p> <p>15 opinions in this case whether Mr. Storms conceived the</p> <p>16 inventions of the '433 patent, and you are the person who</p> <p>17 is applying the claim language in the plain and ordinary</p> <p>18 meaning as you understand that claim language to the</p> <p>19 claims of the patent. So my question to you is -- going</p> <p>20 back again, is the minimum power threshold, is that</p> <p>21 something that must be utilized by the data center in the</p> <p>22 form of it's actually physically being consumed by the</p> <p>23 data center, or may it -- may a minimum power threshold</p> <p>24 also be something that is utilized in the context of</p>	<p style="text-align: right;">Page 92</p> <p>1 it's used in the '433 patent, you can either consume the</p> <p>2 power, meaning physically use it to run bitcoin miners,</p> <p>3 for example, or consume the power to -- in the form of</p> <p>4 selling it back, and minimum power threshold encompasses</p> <p>5 both of those scenarios in its plain and ordinary</p> <p>6 meaning, is that correct?</p> <p>7 A The minimum power threshold is the contracted</p> <p>8 amount that you're going to pay for regardless of -- I</p> <p>9 don't think you have to use it, but regardless of whether</p> <p>10 you use it or not. For example, I could contract -- and</p> <p>11 I believe this is correct -- but, again, this is a</p> <p>12 question for McCamant. We'd have to look at the</p> <p>13 specifics of the purchase agreement.</p> <p>14 If I have one light bulb, I could buy one</p> <p>15 kilowatt hour for today at noon and I could use that</p> <p>16 kilowatt hour to run that light bulb. Or -- and I'm</p> <p>17 going to pay for that kilowatt hour no matter what. Or I</p> <p>18 can turn that light bulb off, and I'm still going to pay</p> <p>19 for that kilowatt hour. Or I could screw in five light</p> <p>20 bulbs and I could use more than that one kilowatt hour,</p> <p>21 and I'm still in compliance with that contract. But I've</p> <p>22 got to pay for that one kilowatt hour, one kilowatt hour</p> <p>23 that I contracted for. But I don't know the specifics of</p> <p>24 the contract to get in anymore detail than that.</p>
<p style="text-align: right;">Page 91</p> <p>1 selling -- is consumed by selling it back?</p> <p>2 A The minimum power threshold -- this is a</p> <p>3 business question really. The minimum power threshold --</p> <p>4 Q This is a claim -- This is a claim construction</p> <p>5 question relating to your understanding of the plain and</p> <p>6 ordinary meaning of the claim terms as you have applied</p> <p>7 them. So please answer the question in that context.</p> <p>8 MR. RICORDATI: Objection. Asked and answered and</p> <p>9 argumentative.</p> <p>10 THE WITNESS: Yeah. I think I was talking and he</p> <p>11 talked over me.</p> <p>12 Fundamentally it's a business question because</p> <p>13 you've purchased that power sometime in advance and you</p> <p>14 purchased it to use it at a certain time, and you're</p> <p>15 going pay for it. So it's a business liability. Whether</p> <p>16 you use the -- whether you have to use the power or not,</p> <p>17 I'm not sure exactly what the requirements are in the</p> <p>18 contract, but you're going to pay for it. So you can use</p> <p>19 it or you can just do nothing and still pay for it.</p> <p>20 Right. That's -- that's -- that's the structure of the</p> <p>21 '433 patent.</p> <p>22 MR. NELSON: Q Right. So -- so let me make sure I</p> <p>23 understand. So to meet the -- the meaning of the claim</p> <p>24 element minimum power threshold, in your understanding as</p>	<p style="text-align: right;">Page 93</p> <p>1 Q So the claims also use the term set of</p> <p>2 computing systems, correct?</p> <p>3 A Uh-huh.</p> <p>4 Q What's the meaning of set of computing systems?</p> <p>5 A That's computing systems, more than one because</p> <p>6 it's a set. Devices that do some sort of computational</p> <p>7 something, and there's more than one of them.</p> <p>8 Q The claim uses the term monitor a set of</p> <p>9 conditions. What does monitor mean?</p> <p>10 A Monitor means observe.</p> <p>11 Q At any particular time? Always? Once?</p> <p>12 A I think the implicit meaning there is that you</p> <p>13 monitor over time, because if you only monitor something</p> <p>14 once, you're really not monitoring it. You made one</p> <p>15 observation. Monitor means multiple observations.</p> <p>16 Q So the claim -- I'll refer to Claim 4 -- If you</p> <p>17 need to look at the patent, I can give you the patent too</p> <p>18 to answer this question because --</p> <p>19 A I can find it in here, I guess.</p> <p>20 Q You may be able to, but you may not for a</p> <p>21 couple of these.</p> <p>22 A Okay. It would be helpful to have a copy of</p> <p>23 it.</p> <p>24 Q Let me give a copy U.S. Patent No. 10,608,433</p>

<p style="text-align: right;">Page 94</p> <p>1 marked as Defendant's Exhibit 203. And just for the 2 record, when I have been using the term '433 patent, I 3 have been using the term relating to this patent. 4 (Exhibit 203 marked as requested) 5 Q If you turn to the last -- second to last page 6 where the claims start. Go to Claim 4. And Claim 4 7 states: The systems of Claim 3 wherein the performance 8 strategy further comprises an order for the set of 9 computing systems to follow when performing the one or 10 more computational operations, wherein the order is based 11 on respective priorities associated with the one or more 12 computational operations. 13 Do you see that? 14 A Uh-huh. 15 Q So do you understand what's meant by an order 16 for the set of computing systems to follow? 17 A Uh-huh. 18 Q What is meant by that? 19 A The order for the computing system to follow 20 could mean a lot of different things. And in 21 interpretation, it could mean for them to turn on. In 22 another interpretation it could mean for them to turn 23 off. It could mean for them to go to a quiescent state. 24 It could mean for them to start processing a certain</p>	<p style="text-align: right;">Page 96</p> <p>1 computational operation, whatever that operation happens 2 to be. And it's feeding those -- the control system is 3 either holding onto the priorities and using those to 4 feed the orders to the computer systems, or it's feeding 5 the orders and the priorities to computer systems who are 6 then using the priorities to do things in a certain order 7 or deprioritize. 8 Q If you go to the next page, Claim 18. 9 A Uh-huh. 10 Q And the second element of that claim says: 11 Determining the performance strategy to further comprise 12 instruction for at least a subset of the set of computing 13 systems to operate at an increased frequency based on a 14 combination of at least a portion of the power option 15 data and the information about the set of computing 16 systems. 17 Do you see that? 18 A Yes. 19 Q What do you understand the set of computing 20 systems to operate at an increased frequency to mean? 21 A That can mean a lot of different things, that 22 can -- 23 Q What do you understand -- What do you 24 understand it to mean, not what it could mean. I'm</p>
<p style="text-align: right;">Page 95</p> <p>1 thing at a certain -- work on a certain workload at a 2 certain rate. 3 Q So let's use the example where you said they 4 were going to turn off as one -- as one of your things. 5 So in that example, the rest of the claim element reads: 6 Wherein the order is based on respective priorities 7 associated with the one or more computational operations. 8 Do you see that? 9 A Uh-huh. 10 Q What is the -- In the case where it's turning 11 off, how would that be based on the respective priorities 12 associated with the one or more computational operations? 13 A Well, the performance strategy is assigning 14 priorities to the operations, and it may be feeding those 15 operations to the set of computers, and the set gets 16 maybe one or maybe more computers, and it's feeding those 17 in some sort of priority order, and it may be feeding 18 those with the priorities to the computing systems, and 19 the computing systems are examining the priorities and 20 following those instructions based on that. 21 Q In that example how are the priorities 22 associated with the computational operations? 23 A Well, the performance strategy is determining 24 the priorities that are associated with each</p>	<p style="text-align: right;">Page 97</p> <p>1 interested in your opinion what it does means. 2 A Well, it means a lot of different things all at 3 once because it's fairly vague. Increased frequency 4 could mean the frequency of the CPU. Right. Could mean 5 jack up the frequency of the CPU or drop the CPU down. 6 So -- Because when a CPU operates faster, it consumes 7 more power. When it operates slower, it consumes less 8 power in general. 9 It could mean to -- in a pulse width modulation 10 kind of an idea, it could mean to operate at a certain 11 level for this period of time, then stop, then operate at 12 that same level for a longer period of time, then stop. 13 And in between there you can change those levels. So 14 it's a -- it's a collection of instructions to say the 15 frequency can be the time of operation or the frequency 16 can be the control of the operation itself through 17 something like a CPU frequency. 18 Q So would increasing the clock speed, would that 19 be one thing that met this claim? 20 A Yeah. It could also mean spin down the disks. 21 Right. Increased frequency could mean go ahead and use 22 your disk a lot. It couldn't mean don't use your disk. 23 It could mean -- increased frequency means a rapidity of 24 some kind in time, and different parts of computers</p>

<p style="text-align: right;">Page 98</p> <p>1 consume power in different ways.</p> <p>2 Q So the patent also talks about monitoring a set</p> <p>3 of conditions, and earlier I asked you about monitor,</p> <p>4 right?</p> <p>5 A Uh-huh.</p> <p>6 Q What do you understand the set of conditions to</p> <p>7 be, the plain meaning of set of conditions?</p> <p>8 A Well, it's a collection of inputs.</p> <p>9 Q Any inputs --</p> <p>10 A Collection of things that you observe. It's</p> <p>11 whatever the conditions the patent claim language talks</p> <p>12 about. In this case going back to Claim 18, for example,</p> <p>13 it talks about information about the set of computing</p> <p>14 systems. That could be some of the conditions.</p> <p>15 Q So if you go to paragraph 46 of your report --</p> <p>16 A Oh, wow. Turned right to it. Okay.</p> <p>17 Q So there you give the definition -- your view</p> <p>18 of the definition of a person of ordinary skill in the</p> <p>19 art?</p> <p>20 A Right.</p> <p>21 Q And you have a degree in electrical</p> <p>22 engineering. Is that a bachelor's degree or is it</p> <p>23 something else?</p> <p>24 A Refers to bachelor's degree.</p>	<p style="text-align: right;">Page 100</p> <p>1 Q Do you consider the level of skill in this --</p> <p>2 Well, level of skill in the art here, what do you</p> <p>3 consider this art to be?</p> <p>4 A The art of the '433 patent?</p> <p>5 Q Yes.</p> <p>6 A Well, you have to have a little bit of software</p> <p>7 knowledge, a little of power system knowledge, and a</p> <p>8 little bit of business knowledge.</p> <p>9 Q Do you -- do you consider the field of art -- a</p> <p>10 person of ordinary skill in the art here to be relatively</p> <p>11 a low-skilled individual, high-skilled individual? Where</p> <p>12 does the person of ordinary skill in this art, in your</p> <p>13 view, fit in?</p> <p>14 A I don't think this is particularly complicated.</p> <p>15 I mean, there are aspects of it that are a little more</p> <p>16 detailed, but I don't think it's particularly</p> <p>17 complicated.</p> <p>18 Q Do you think Dr. Ehsani meets the level of</p> <p>19 skill in the art in this case?</p> <p>20 A In some ways.</p> <p>21 Q In your view?</p> <p>22 A Yeah.</p> <p>23 Q Do you know Dr. Ehsani?</p> <p>24 A I was a student at Texas A & M when he first</p>
<p style="text-align: right;">Page 99</p> <p>1 Q Computer science, also refers to a bachelor's</p> <p>2 degree?</p> <p>3 A Uh-huh.</p> <p>4 Q Or a similar field. What do you mean by</p> <p>5 similar field?</p> <p>6 A For example, physics, computer information</p> <p>7 systems. There's a bunch of different degree types that</p> <p>8 have this same sort of content in there.</p> <p>9 Q Well, you say or similar fields. So I'm</p> <p>10 interested in what fields you would consider to be</p> <p>11 similar. So you said physics, you said --</p> <p>12 A There's a bunch -- there's a lot of different</p> <p>13 ones.</p> <p>14 Q Tell me what they are.</p> <p>15 A Easiest way to be to go back to the Abet</p> <p>16 definition of credited bachelor's degrees. It could be</p> <p>17 some form of engineering technology, engineering --</p> <p>18 electrical engineering technology, computer engineering</p> <p>19 technology, electrical engineering, computer engineering,</p> <p>20 computer science, software engineering, physics, computer</p> <p>21 information systems. I mean, we'll be here all day</p> <p>22 because different places define bachelor's degrees in</p> <p>23 different ways. And there's probably 10 or 15 on the</p> <p>24 Abet list that would be similar.</p>	<p style="text-align: right;">Page 101</p> <p>1 joined Texas A & M as a faculty member. I don't believe</p> <p>2 I ever had classes with him, but I have seen him. I</p> <p>3 think I've probably met him a few times long time ago.</p> <p>4 Q Do you have an opinion regarding his</p> <p>5 reputation?</p> <p>6 A Uhn-uhn.</p> <p>7 Q Do you think he's -- has integrity, for</p> <p>8 example?</p> <p>9 A I suppose so. I mean, I haven't had any</p> <p>10 contact with him in more than 20 years.</p> <p>11 Q You've read the '433 patent, correct?</p> <p>12 A Yes.</p> <p>13 Q How many times?</p> <p>14 A I have no idea, many.</p> <p>15 Q Many like 3? Many like 20?</p> <p>16 A You mean from beginning to end? Probably once</p> <p>17 from beginning to end. Back and forth little pieces here</p> <p>18 and there, hundreds.</p> <p>19 Q When did you read it last?</p> <p>20 A Read it -- By read it do you mean from</p> <p>21 beginning to end?</p> <p>22 Q Yes.</p> <p>23 A That would have been four months ago.</p> <p>24 Q When did you look at it last?</p>

<p style="text-align: right;">Page 102</p> <p>1 A Two or three minutes ago.</p> <p>2 Q Well, prior to this deposition when did you</p> <p>3 look at it last?</p> <p>4 A Well, there's snippets of it in the report so</p> <p>5 I've seen snippets of it in going through the report.</p> <p>6 Does that qualify as looking at it or are you talking --</p> <p>7 Q Sure.</p> <p>8 A Yesterday, the day before.</p> <p>9 Q But you didn't -- These reports were done</p> <p>10 before yesterday or the day before. So did you look at</p> <p>11 it in the context of preparing for your deposition?</p> <p>12 A Yeah.</p> <p>13 Q How long did you spend preparing for your</p> <p>14 deposition?</p> <p>15 A A few hours yesterday, and a couple hours a</p> <p>16 couple more days earlier in the week.</p> <p>17 Q Did you meet with anybody?</p> <p>18 A Sure. Met with the legal team.</p> <p>19 Q Did you meet with Mr. Storms?</p> <p>20 A No, not during the deposition -- not during the</p> <p>21 prep for the deposition, no.</p> <p>22 Q Did you talk to Mr. Storms?</p> <p>23 A Not during that time, no.</p> <p>24 Q Did you meet in person or virtually with the</p>	<p style="text-align: right;">Page 104</p> <p>1 interview when they were telling me about the case, and</p> <p>2 they were actually relatively inaccurate.</p> <p>3 Q Did your notes refresh your recollection, yes</p> <p>4 or no?</p> <p>5 A No. I said the notes that I took were</p> <p>6 relatively inaccurate, so they didn't refresh my</p> <p>7 recollection. They confirmed that I had gotten it wrong</p> <p>8 the first time. The things that refreshed my</p> <p>9 recollection would be the reports and the documents cited</p> <p>10 in the reports.</p> <p>11 Q So take a look at the patent again and look at</p> <p>12 Claim 1 real quick. Just read it to yourself, and let me</p> <p>13 know when you're done.</p> <p>14 A Okay.</p> <p>15 Q So what is your understanding of the plain and</p> <p>16 ordinary meaning of Claim 1?</p> <p>17 A Claim 1 is very broad. There's plain and</p> <p>18 ordinary meaning of a bunch of different terms.</p> <p>19 Q We talked about the terms. Maybe it was a poor</p> <p>20 question. I'm just trying -- I'm trying to get your</p> <p>21 understanding of the scope of Claim 1 as somebody who is</p> <p>22 opining on the plain and ordinary meaning of terms and</p> <p>23 comparing Mr. Storms' system as we defined it to the</p> <p>24 claim.</p>
<p style="text-align: right;">Page 103</p> <p>1 legal team?</p> <p>2 A In person here, yesterday. Virtually before</p> <p>3 that.</p> <p>4 Q Who did you meet with?</p> <p>5 A Yesterday?</p> <p>6 Q Yes.</p> <p>7 A Ray and Ben.</p> <p>8 Q Who did you meet with before that?</p> <p>9 A Ray and Ben.</p> <p>10 Q Did you look at any documents in the context of</p> <p>11 preparing for the deposition?</p> <p>12 A Just the reports and the documents that are</p> <p>13 associated with the reports.</p> <p>14 Q Anything else?</p> <p>15 A Well, my own notes, but that's the same as the</p> <p>16 documents in the reports.</p> <p>17 Q Did your notes refresh your recollection?</p> <p>18 A The notes weren't particularly helpful</p> <p>19 actually. The reading through the documents was more</p> <p>20 helpful.</p> <p>21 Q Did your notes refresh your recollection, yes</p> <p>22 or no?</p> <p>23 A The notes that I was referring to were taken at</p> <p>24 the very beginning when I was -- basically during the</p>	<p style="text-align: right;">Page 105</p> <p>1 A Well, it's a system of computing systems, a</p> <p>2 collection of computing systems, one or more, I guess,</p> <p>3 that can be instructed to do computational operations</p> <p>4 based on a business arrangement that has to do with power</p> <p>5 options.</p> <p>6 Q Anything else?</p> <p>7 A Well, and instructing to do the computational</p> <p>8 operations it's based on a performance strategy that it</p> <p>9 figures out, and the performance strategy is based on a</p> <p>10 set of conditions as well as information that's</p> <p>11 associated with the power option data.</p> <p>12 Q Anything else?</p> <p>13 A We can go on for days. This claim is broad.</p> <p>14 Q I understand that's your opinion, yes.</p> <p>15 A There's always going to be something else. I</p> <p>16 mean, you're asking for me to summarize something that's</p> <p>17 really complex. My summary will, by definition, be a</p> <p>18 little bit -- have holes in it or have gaps in it. So if</p> <p>19 you ask me if there's anything else, I'll say yes every</p> <p>20 time until we go exactly through the language of the</p> <p>21 claim.</p> <p>22 Q Yeah. I'm just trying to get your</p> <p>23 understanding generally of what the scope of the claim</p> <p>24 is. So is there anything else with your general</p>

<p style="text-align: right;">Page 106</p> <p>1 understanding about the scope of the claim?</p> <p>2 A That's -- I think that's a reasonable summary.</p> <p>3 But if you ask me if there's anything else, I'll say yes</p> <p>4 because that claim is pretty broad.</p> <p>5 MR. NELSON: Why don't we take a five-minute break.</p> <p>6 THE VIDEOGRAPHER: The time is 11:36 a.m. and we're</p> <p>7 going off the video record.</p> <p>8 (Off the record)</p> <p>9 THE VIDEOGRAPHER: The time is 12:34 p.m. And we're</p> <p>10 back on the video record.</p> <p>11 MR. NELSON: Q Good afternoon, Dr. McClellan.</p> <p>12 A Afternoon.</p> <p>13 Q During the break or at any point today have you</p> <p>14 discussed the subject matter of your testimony with</p> <p>15 counsel?</p> <p>16 A No.</p> <p>17 Q So before the lunch break we were talking about</p> <p>18 the plain and ordinary meaning of certain terms of the</p> <p>19 '433 patent. Do you remember that?</p> <p>20 A Yes.</p> <p>21 Q What did you do to form your opinions as to</p> <p>22 what the plain and ordinary meaning of these terms were?</p> <p>23 A Well, just interpreted the terminology in the</p> <p>24 patent in the context of my industry knowledge and</p>	<p style="text-align: right;">Page 108</p> <p>1 say domain knowledge, do you mean your personal</p> <p>2 knowledge as --</p> <p>3 A It's my understanding of the technologies that</p> <p>4 are at play, my understanding of the markets, you know,</p> <p>5 yeah, and other materials that are associated with the</p> <p>6 case like the other background materials.</p> <p>7 Q Okay. In looking at the terms of the '433</p> <p>8 patent, did you find any of them to be ambiguous?</p> <p>9 A All patents have terms that are ambiguous, so,</p> <p>10 yes.</p> <p>11 Q Which ones did you find to be ambiguous?</p> <p>12 A Do you want to go through the claims and have</p> <p>13 me point them out? I mean, we have talked about several</p> <p>14 of them already.</p> <p>15 Q Let me make sure. Let me give you a definition</p> <p>16 of what I mean by ambiguous because I'm not sure you're</p> <p>17 clear. So what I mean by ambiguous in -- that you can't</p> <p>18 figure out the meaning from the specification of the</p> <p>19 patent itself or the prosecution history of the patent if</p> <p>20 you looked at it.</p> <p>21 MR. RICORDATI: Objection. Calls for a legal</p> <p>22 conclusion.</p> <p>23 THE WITNESS: I still think there's some ambiguities</p> <p>24 in the terminology.</p>
<p style="text-align: right;">Page 107</p> <p>1 technology knowledge.</p> <p>2 Q Did you look at the -- did you consider the</p> <p>3 patent in forming your opinion as to the plain and</p> <p>4 ordinary meaning of the terms?</p> <p>5 A I guess that's fair, yeah.</p> <p>6 Q Did you consider -- Do you know what the</p> <p>7 prosecution history of a patent is?</p> <p>8 A Uh-huh.</p> <p>9 Q Did you consider the prosecution history of the</p> <p>10 '433 patent in forming your opinions as to the plain and</p> <p>11 ordinary meaning of the terms?</p> <p>12 A I didn't look at it in detail.</p> <p>13 Q So the answer is no?</p> <p>14 A Right.</p> <p>15 Q Did you consider anything else in the context</p> <p>16 of forming your opinion as to the plain and ordinary</p> <p>17 meaning of the terms of the '433 patent?</p> <p>18 A My interpretation of creating a plain and</p> <p>19 ordinary meaning interpretation is to somebody who is</p> <p>20 skilled in the art. So if you have domain knowledge, you</p> <p>21 use your domain knowledge to interpret the terms in the</p> <p>22 context of that domain knowledge. So that's basically</p> <p>23 what I did.</p> <p>24 Q So you used your personal knowledge -- when you</p>	<p style="text-align: right;">Page 109</p> <p>1 MR. NELSON: Q I understand, but I want to make</p> <p>2 sure when the term ambiguous is used that we're using it</p> <p>3 in the same context here.</p> <p>4 So, when I asked you if there were any terms in</p> <p>5 the '433 patent that you found ambiguous in formulating</p> <p>6 the plain and ordinary meaning, what I meant by the term</p> <p>7 ambiguous was that you as a -- as a purported expert here</p> <p>8 could not determine the meaning of the claim term absent</p> <p>9 looking outside of the specification or the prosecution</p> <p>10 history of the patent had you looked at that.</p> <p>11 A I think -- I think the plain and ordinary</p> <p>12 meaning of the terms that are in here are less ambiguous</p> <p>13 under those constraints.</p> <p>14 Q But my question is very specific. In the</p> <p>15 context of forming your plain and ordinary meaning, are</p> <p>16 there any terms in the patent -- Let me start over.</p> <p>17 You told me what you did to determine the plain</p> <p>18 and ordinary meaning, and so my follow-up question is,</p> <p>19 are there any terms in the patent claims that you as a</p> <p>20 purported expert could not determine the plain and</p> <p>21 ordinary meaning of based on solely looking at the</p> <p>22 specification and/or the prosecution history had you</p> <p>23 looked at it?</p> <p>24 A Well, you can determine the general plain and</p>

<p style="text-align: right;">Page 110</p> <p>1 ordinary meaning of it, but you can't determine the 2 specific meaning of it. For example, things like 3 computer system, that can mean a whole lot of different 4 things. Right. I think I understand in the context of 5 this what they mean by computer system, so it becomes 6 less ambiguous. But the term computer system can mean a 7 whole lot of different things. So you have to use the 8 domain and the terminology that's in the patent to kind 9 of disregard that type of computer system because we're 10 talking about one that's like this, for example. 11 Q So use that as an example. So what do you 12 believe the term computer system -- the plain and 13 ordinary meaning of the term computer system is in the 14 context of the '433 patent? 15 A Well, because of the -- because of the -- 16 because of the application space and because of the 17 domain space, I think they're talking about things that 18 are like essentially hardened or not hardened pizza box 19 servers that have particular specifications. They're not 20 talking, for example, about a raspberry pi, they're not 21 talking about an Arduino, they're not talking about a 22 micro controller which could be construed as a computer 23 system. They're talking about enterprise class, data 24 center class computer system. Computer system spans the</p>	<p style="text-align: right;">Page 112</p> <p>1 there any terms that you as an expert could not derive, 2 understand the plain and ordinary meaning of based solely 3 on looking at the specification of the patent and the 4 prosecution history and the claims themselves as part of 5 the specification? 6 A I think -- I think using that constrained 7 context you can come up with interpretations of these 8 claims, their plain and ordinary interpretations, that 9 get you a pretty accurate perspective on what those terms 10 mean but -- for example, back to computer systems 11 example. There's nothing in here that talks about the 12 operating system that's functioning on the computer for 13 example. 14 So there's completely different classes of 15 operating systems that might be functional for some 16 things rather than other things. So it's a computer 17 system that incorporates a large swath of potential 18 interpretations, but the general concept of computer 19 system I think is pretty clear from this. It's an 20 enterprise class computer system, maybe a pizza box, 21 maybe a one U rack mountable server, but it has certain 22 types of characteristics that would enable it -- that 23 would better enable it to do things like bitcoin mining, 24 as opposed to a different kind of computer system that</p>
<p style="text-align: right;">Page 111</p> <p>1 gamut. 2 Q And so using that again as an example, do you 3 believe as an expert that you could not determine the 4 meaning of computer system in this -- as used in the '433 5 patent based on reading the '433 patent, its 6 specification, and the prosecution history, that you 7 would need other information other than what's in the 8 patent and the prosecution history to determine the plain 9 and ordinary meaning of computer system as used in the 10 patent? 11 A I would need -- that would depend on the -- it 12 would depend on the specification application and those 13 associated with the patent, but I think the general term 14 of computer system that's used in the patent has a 15 meaning that tends towards an enterprise class server 16 system, rather than some other type of system. 17 Q Yeah. I understand that. So my question is 18 really specific. So you're a purported expert in this 19 case. You formed opinions as to what the plain and 20 ordinary meaning of certain terms are. You told me what 21 you did to reach those opinions of what the plain and 22 ordinary meanings are, you told me what you looked at. 23 So my question to you -- and this is very 24 specific -- is looking at the claims of the patent, are</p>	<p style="text-align: right;">Page 113</p> <p>1 wouldn't be configured that way. 2 Q And so using that as an example, just to be 3 clear, so to understand the plain and ordinary meaning of 4 computer system, would you as an expert have to rely on 5 anything else other than the patent and its prosecution 6 history? 7 A Well, that's where a person I think of skill in 8 the art comes into it. Right. You read between the 9 lines. 10 Q You're not answering my question. My question 11 is would you as an expert to determine the plain and 12 ordinary meaning of a computer system, would you have -- 13 to reach that meaning, would you have to look -- could 14 you reach that meaning looking solely at the patent and 15 the prosecution history -- 16 MR. RICORDATI: Objection. 17 MR. NELSON: Q -- or would you need to go outside 18 of the patent and the prosecution history to get some 19 other information, whatever that is, to reach the plain 20 and ordinary meaning of computer system? 21 MR. RICORDATI: Objection. Asked and answered. 22 THE WITNESS: I can describe to you what my process 23 would be for interpreting computer system in the context 24 of this patent.</p>

<p style="text-align: right;">Page 114</p> <p>1 MR. NELSON: Q Well, You already did. You already</p> <p>2 did that.</p> <p>3 A I wouldn't go consult some other thing. I</p> <p>4 would look at the computer system, and I would think</p> <p>5 about this is where the skill in the art -- I would think</p> <p>6 about what it is they're trying to do with a computer</p> <p>7 system and how you would optimize the structure of that</p> <p>8 computer system to function in this application space,</p> <p>9 and that's what I would interpret computer system to mean</p> <p>10 as a result.</p> <p>11 Q I understand.</p> <p>12 A I wouldn't rely on anything outside for that.</p> <p>13 Q Well, but what you're talking about there is</p> <p>14 you're relying on your own personal knowledge as an</p> <p>15 expert.</p> <p>16 A Yeah. That's the person of ordinary skill in</p> <p>17 the art.</p> <p>18 Q Well, that's not the question I'm asking. I'm</p> <p>19 asking as an expert, looking only at the patent</p> <p>20 specification claims and the prosecution history, could</p> <p>21 you divine the plain and ordinary meaning of computing</p> <p>22 system looking only at that information and nothing else?</p> <p>23 MR. RICORDATI: Objection. Asked and answered.</p> <p>24 THE WITNESS: I mean, that's what we've done.</p>	<p style="text-align: right;">Page 116</p> <p>1 my personal experience.</p> <p>2 MR. NELSON: Q Your personal experience --</p> <p>3 A If I had zero experience, I would have a</p> <p>4 potentially different interpretation of the term computer</p> <p>5 system, for example. My experience has informed me that</p> <p>6 the interpretation of computer system in this context is</p> <p>7 very much, much more likely to be that rather than this.</p> <p>8 Right. If I had -- if I didn't have that experience I</p> <p>9 might lump all those together as computer system. For</p> <p>10 example, this is a computer system. This is not</p> <p>11 applicable in this case.</p> <p>12 Q Just for the record, this, he's holding up his</p> <p>13 cell phone.</p> <p>14 A My cell phone.</p> <p>15 Q Okay. I think I understand.</p> <p>16 A You understand what I'm saying?</p> <p>17 Q Yes.</p> <p>18 A I can't divorce my own personal experience from</p> <p>19 my interpretation here.</p> <p>20 Q Okay.</p> <p>21 A It's very difficult for me to do that.</p> <p>22 Q And if you had divorced your own experience</p> <p>23 from it, if I understand correctly, your plain and</p> <p>24 ordinary meanings might be different?</p>
<p style="text-align: right;">Page 115</p> <p>1 MR. NELSON: Q Well, That's not what you said you</p> <p>2 did. You said you looked at -- you used your own</p> <p>3 personal knowledge as an expert and the domain. My --</p> <p>4 A That's what I just said. That's what the</p> <p>5 report is. It's an interpretation of the patent claims</p> <p>6 taking into account my knowledge in the domain and trying</p> <p>7 to interpret those in a plain and ordinary fashion.</p> <p>8 Q I understand that. And I understand that in</p> <p>9 doing that you took into account your knowledge of the</p> <p>10 domain based on your experience and the patent, right?</p> <p>11 A Yeah.</p> <p>12 Q And my question to you is -- I understand what</p> <p>13 you did. My question to you now -- It's really a</p> <p>14 yes-or-no question. Is in your opinion could you have</p> <p>15 arrived at a plain and ordinary meaning -- I don't care</p> <p>16 what that meaning of it is -- could you arrived at the</p> <p>17 plain and ordinary meaning based solely on looking at the</p> <p>18 patent and the prosecution history, or did you need to go</p> <p>19 outside of the patent and the prosecution history in</p> <p>20 terms of your own personal knowledge and the domain to</p> <p>21 arrive at the meaning?</p> <p>22 MR. RICORDATI: Objection. Asked and answered.</p> <p>23 THE WITNESS: So when you're saying outside of the</p> <p>24 patent and the prosecution history, you're talking about</p>	<p style="text-align: right;">Page 117</p> <p>1 A It's possible. But it's the plain and ordinary</p> <p>2 meaning in the interpretation of a person who is skilled</p> <p>3 in the art. So the skilled in the art part kind of</p> <p>4 automatically focuses.</p> <p>5 Q All right. Let's look at different pieces of</p> <p>6 your report here.</p> <p>7 A Which report? The first one?</p> <p>8 Q The first one. Why don't you go to</p> <p>9 paragraph 57.</p> <p>10 A Okay.</p> <p>11 Q All right. So 57 is connection with claim</p> <p>12 element 1, which you label as 1(a) for Claim 1, correct?</p> <p>13 A Yes.</p> <p>14 Q And this is your opinion as to where that</p> <p>15 element is met in Mr. Storms' system, is that fair?</p> <p>16 A Yeah. It's the noted modules perform functions</p> <p>17 related to the elements of that claim.</p> <p>18 Q And then you list 11 modules here, right?</p> <p>19 A Yes.</p> <p>20 Q And these modules 1 through 11, are those</p> <p>21 Mr. Storms' Python source code?</p> <p>22 A Yeah. Those are the names of the modules of</p> <p>23 the Python. I think it's all Python. Yeah. Names of</p> <p>24 the modules of the Python code as provided to me.</p>

<p style="text-align: right;">Page 118</p> <p>1 Q Did you look -- in the code that you looked at</p> <p>2 in this case, did you look at any code that wasn't</p> <p>3 Python?</p> <p>4 A I don't think so. I think it was all Python.</p> <p>5 Q So if I say Python code, do we have a common</p> <p>6 understanding that we're talking about the Mr. Storms</p> <p>7 code in this case?</p> <p>8 A Yeah. I believe they were -- I believe</p> <p>9 everything was Python.</p> <p>10 Q Okay. And the Python code that's listed here</p> <p>11 -- I know there's others -- other modules that are listed</p> <p>12 here, but the collectively Mr. Storms' Python code,</p> <p>13 that's the source code in this case that we've been</p> <p>14 talking about, right?</p> <p>15 A Yes.</p> <p>16 Q Now, to your knowledge did Mr. Storms ever make</p> <p>17 the source code available to Mr. McNamara?</p> <p>18 A I don't believe so. I think the only things</p> <p>19 that were provided were the data sheet and the diagram</p> <p>20 and the Excel spreadsheet, but I don't know if the source</p> <p>21 code was provided or not.</p> <p>22 Q Okay.</p> <p>23 A I don't recall.</p> <p>24 Q You have not seen any evidence that it was,</p>	<p style="text-align: right;">Page 120</p> <p>1 Q What if it turned out that the court finds none</p> <p>2 of these 11 actually taught that element? Would there --</p> <p>3 would there be others --</p> <p>4 A I don't think that's possible.</p> <p>5 Q I understand that's your opinion. I'm saying</p> <p>6 what if it turned out that the court ruled that way. I'm</p> <p>7 trying to figure out what else would be your opinion as</p> <p>8 to whether there's any other code that would meet it</p> <p>9 that's not listed here.</p> <p>10 A Well, if these particular modules were stricken</p> <p>11 as being not applicable to this claim element, we'd have</p> <p>12 to go back into the other ones and see if there was other</p> <p>13 pieces of that claim element in those modules. It's</p> <p>14 possible that there is because there were so many</p> <p>15 different modules and a lot of them overlapped a lot.</p> <p>16 Q So what was your criteria for deciding to list</p> <p>17 these 11?</p> <p>18 A These ones were the ones that seemed to have</p> <p>19 the most applicability to that claim language.</p> <p>20 Q Do you ever explain specifically where each of</p> <p>21 these modules meet the claim language?</p> <p>22 A If you look in the appendix, you'll find a</p> <p>23 summary of each module that talks about the different</p> <p>24 functions, the different data structures, the different</p>
<p style="text-align: right;">Page 119</p> <p>1 have you?</p> <p>2 A No. I don't recall seeing any evidence like</p> <p>3 that.</p> <p>4 Q If you turn to page 17 of your report, we're</p> <p>5 still in paragraph 57, just on next page you say: A non</p> <p>6 -- nonexhaustive example -- nonexhaustive examples are</p> <p>7 listed below with reference to the current claim</p> <p>8 language. A detailed analysis of each module is provided</p> <p>9 in the appendix.</p> <p>10 A Uh-huh.</p> <p>11 Q So are there other -- Is it your opinion there</p> <p>12 are other code modules that also demonstrate possession</p> <p>13 of the element of Claim 1 or is this all of them?</p> <p>14 Because you say it's nonexhaustive samples. So I'm</p> <p>15 trying to figure out if there's others that aren't listed</p> <p>16 here that you believe demonstrate that Mr. Storms was in</p> <p>17 possession of Claim 1 element A.</p> <p>18 A It's possible. These are the ones that seem to</p> <p>19 jump out as being the most relevant.</p> <p>20 Q Okay. So it's -- I guess I'm trying to figure</p> <p>21 out why if it's possible there were others why didn't you</p> <p>22 list them all.</p> <p>23 A Because there was no need. There's already 10</p> <p>24 or 11 listed here.</p>	<p style="text-align: right;">Page 121</p> <p>1 elements, as well as specific Bates numbers and line</p> <p>2 numbers.</p> <p>3 Q So it's -- I'm trying to understand the</p> <p>4 structure of your report. So if we want to see the</p> <p>5 specific reason why each of these modules allegedly meets</p> <p>6 -- why it's your opinion that this -- that the module</p> <p>7 meets the claim element, we'd look at the appendix</p> <p>8 description for each module?</p> <p>9 A Yes.</p> <p>10 Q Okay. And is that true -- Because your</p> <p>11 report -- for each claim element it lists a group of</p> <p>12 modules. Some of them are the same as these, some are</p> <p>13 different than these.</p> <p>14 A Correct.</p> <p>15 Q So for each of these modules, your opinion as</p> <p>16 to specifically why the module meets the claim element is</p> <p>17 contained in the appendix?</p> <p>18 A Well, and in general -- in general there's a</p> <p>19 little summary at the -- In the body of the report,</p> <p>20 there's a summary around the module that customizes why</p> <p>21 -- that kind of explains why that module is applicable to</p> <p>22 that piece of the claim language. If you want more</p> <p>23 detail than that, then you go to the appendix. And if</p> <p>24 you want more detail than that, then you use the appendix</p>

<p style="text-align: right;">Page 122</p> <p>1 as an index into the actual source code.</p> <p>2 Q I'm trying -- I can look at the actual source</p> <p>3 code. I'm trying to understand all the different places</p> <p>4 where your opinions are provided. So it would -- it</p> <p>5 sounds like they're provided in the paragraphs themselves</p> <p>6 associated with the particular claim element, and then to</p> <p>7 the extent those paragraphs call out source code modules</p> <p>8 the appendix where you give your opinion as to what that</p> <p>9 source code module does, is that fair?</p> <p>10 A Yeah. I mean, the best way to think about it</p> <p>11 is the source code is laying on the table. Think of it</p> <p>12 as little dots, little elements of the source code laying</p> <p>13 on the table. And the appendix takes a subset of that</p> <p>14 source code, a module, and creates a summary of it with</p> <p>15 specific indexes into it. And then in the claims,</p> <p>16 there's a second layer abstraction that kind of explains</p> <p>17 why that first layer of abstraction is applicable.</p> <p>18 So there's kind of a three layer thing there</p> <p>19 that keeps from having to paste pieces of source code</p> <p>20 into the module, which gets really cumbersome, but it's</p> <p>21 the equivalent of pasting pieces of source code into the</p> <p>22 report because you can index directly from the body of</p> <p>23 the report to the module, to the element, to the code.</p> <p>24 Q So let's turn to paragraph 61 and 62.</p>	<p style="text-align: right;">Page 124</p> <p>1 Q So what do you -- what do you understand or</p> <p>2 what do you mean by associated power threshold?</p> <p>3 A Well, the term intervals, each had an</p> <p>4 associated power threshold.</p> <p>5 Q So is that the same as a minimum power</p> <p>6 threshold, or is that something different?</p> <p>7 A It's essentially the same idea. It's the same</p> <p>8 concept, right. You have a time interval with a target.</p> <p>9 Target is the threshold.</p> <p>10 Q So -- but the claim says minimum threshold, and</p> <p>11 you use the same statement associated power threshold.</p> <p>12 And my question is, do you mean something different or do</p> <p>13 you mean minimum power threshold?</p> <p>14 A It means -- it essentially means the same</p> <p>15 thing.</p> <p>16 Q You say essentially. Does it mean the same</p> <p>17 thing or not?</p> <p>18 A If the power threshold is a minimum, then it's</p> <p>19 the minimum power threshold.</p> <p>20 Q Okay. And what if it's not?</p> <p>21 A The power threshold not necessarily have to be</p> <p>22 the minimum threshold in some cases. Right. So you</p> <p>23 could have -- the minimum power threshold is associated</p> <p>24 with the power option agreement.</p>
<p style="text-align: right;">Page 123</p> <p>1 A Uh-huh.</p> <p>2 Q And that refers to claim element 1 -- what you</p> <p>3 label as 1(c), correct?</p> <p>4 A Yes.</p> <p>5 Q And so if you look at 62, does that explain</p> <p>6 where in Bearbox's system you believe that claim element</p> <p>7 is satisfied?</p> <p>8 A Paragraph 62 explains, in general, that the</p> <p>9 Bearbox system used those elements of the claim or had</p> <p>10 reference to those elements of the claim, and then the</p> <p>11 source code that's listed in 64 calls out specific</p> <p>12 modules that would provide a more specific perspective on</p> <p>13 that.</p> <p>14 Q So in paragraph 62 you state: The systems</p> <p>15 conceived and/or developed by Bearbox satisfy this aspect</p> <p>16 of Claim 1 at least because the Bearbox systems</p> <p>17 calculated profitability at distinct time intervals, each</p> <p>18 with an associated power threshold, such as comparing</p> <p>19 mining profitability based on, inter alia, current power</p> <p>20 usage and energy price conditions on the one hand with</p> <p>21 profitability based, inter alia, on expected future power</p> <p>22 usage and energy price conditions.</p> <p>23 Do you see that?</p> <p>24 A Uh-huh.</p>	<p style="text-align: right;">Page 125</p> <p>1 Q Correct.</p> <p>2 A Right. So it would be straightforward to</p> <p>3 change the code to where it wasn't relative to a minimum</p> <p>4 power threshold. It would be relative to some different</p> <p>5 power threshold, but it's the same thing. Threshold is a</p> <p>6 threshold.</p> <p>7 Q But you can make it -- So is the code as</p> <p>8 currently written associated -- is it -- is it looking at</p> <p>9 a minimum power threshold, or is it looking at an</p> <p>10 associated threshold?</p> <p>11 A They would be the same thing in this case.</p> <p>12 Q What condition would it not be the same thing?</p> <p>13 A If the code were adjusted a little bit, it</p> <p>14 could be a different kind of threshold. So it's a</p> <p>15 threshold that's associated with the time interval. If</p> <p>16 you're doing a power option agreement, then you can call</p> <p>17 it the minimum power threshold. You can do different</p> <p>18 kinds of -- I mean, the code is flexible enough to where</p> <p>19 you can fiddle with it and it can be the maximum power</p> <p>20 threshold. It's a threshold.</p> <p>21 Q What do you mean by threshold?</p> <p>22 A I think we've already defined threshold.</p> <p>23 Q What do you mean by it again for my</p> <p>24 edification?</p>

<p style="text-align: right;">Page 126</p> <p>1 MR. RICORDATI: Objection. Asked and answered.</p> <p>2 THE WITNESS: It's a value that you want to be aware</p> <p>3 of to either cross or not cross or to be above or below.</p> <p>4 It's a -- it's not a target value because you're not</p> <p>5 trying to achieve it. Right. It's a boundary value in</p> <p>6 some respects.</p> <p>7 MR. NELSON: Q So does the code receive data that</p> <p>8 is the minimum -- In your view does the code receive data</p> <p>9 that is the minimum power threshold?</p> <p>10 A Yeah. The code simulates the receiving of time</p> <p>11 intervals with power thresholds and computes target</p> <p>12 values.</p> <p>13 Q And what variable in the code holds the minimum</p> <p>14 power threshold data?</p> <p>15 A We'd have to look specifically at the code. We</p> <p>16 may be able to find it in the appendix. Let me look.</p> <p>17 In arb_main -- in paragraph 64, it refers to</p> <p>18 arb_main_AEC. If you look at arb_main_AEC on</p> <p>19 paragraph A.1, page 94 talks about the way the module</p> <p>20 processes the data. It talks about pricing values and</p> <p>21 break even point and the provided parameters which</p> <p>22 include market parameters, load parameters and so on.</p> <p>23 And if you look down one, two, three -- fourth or fifth,</p> <p>24 good example the fourth bullet says: Good break even --</p>	<p style="text-align: right;">Page 128</p> <p>1 A Hard coding it has to do with at runtime when</p> <p>2 the computer is loading those values. Right. A hard</p> <p>3 coded variable is a loaded media. Right. A variable --</p> <p>4 a hard coded value is low to medium. A variable value is</p> <p>5 de-reference into a memory location. Those are different</p> <p>6 things. There's very few instances where Mr. Storms used</p> <p>7 hard coded values.</p> <p>8 Q So going back to paragraph 62 for a minute.</p> <p>9 The word again associated power threshold which I</p> <p>10 understand you're also maintaining maintains is the same</p> <p>11 as a minimum power threshold here. How is that -- how is</p> <p>12 that arrived at in Mr. Storms' simulation?</p> <p>13 A The associated power threshold -- the power</p> <p>14 threshold associated with distinct time intervals?</p> <p>15 Q Yes.</p> <p>16 A We'd have to look specifically at the code to</p> <p>17 see where those values were -- were read or derived, but</p> <p>18 they're written out into a table. And I believe the</p> <p>19 table uses a constant value or very slowly changing</p> <p>20 value.</p> <p>21 Q Does the Bearbox system that you've</p> <p>22 described -- does it have the ability to determine the</p> <p>23 amount of power that it is -- that it is using at any</p> <p>24 given point in time?</p>
<p style="text-align: right;">Page 127</p> <p>1 Q Fourth bullet point I think you meant.</p> <p>2 A The fifth bullet point talks about a function</p> <p>3 called, it's get break even USD per kilowatt hour which</p> <p>4 determines the break even power price. So there's a --</p> <p>5 for the configured miner hash rate and kilowatt load and</p> <p>6 for insertion in the database, blah, blah, blah, that</p> <p>7 there would be a minimum power threshold in there. I</p> <p>8 don't know -- we'd have to look specifically at the code</p> <p>9 to see what the value of the variable -- what the name of</p> <p>10 the variable was.</p> <p>11 Q That variable in Mr. Storms' simulation was</p> <p>12 hard coded, right, it was a fixed -- that placeholder for</p> <p>13 -- in Mr. Storms' simulation for a power amount there,</p> <p>14 that was fixed, right, hard coded into the code?</p> <p>15 A I don't know. We'd have to look specifically</p> <p>16 at the code to see where the value of the variable was --</p> <p>17 what the name of the variable was and where the value of</p> <p>18 the variable would have been defined. But it wouldn't</p> <p>19 hard code it because it was assigned to a variable.</p> <p>20 Q When you say assigned to a variable, what do</p> <p>21 you mean?</p> <p>22 A Well, there's a difference between hard coding</p> <p>23 and initializing a variable.</p> <p>24 Q Explain.</p>	<p style="text-align: right;">Page 129</p> <p>1 A It appears so, yes.</p> <p>2 Q Where do you describe that it can do that?</p> <p>3 A It knows how many miners are in play, it knows</p> <p>4 the power consumption of the simulated miners, it knows</p> <p>5 how many of them there are. That's how much the load</p> <p>6 would be. It's also described in -- it's also described</p> <p>7 in the data sheet for the rack system or the container</p> <p>8 system.</p> <p>9 Q And, so, in that context, the assumption you're</p> <p>10 make something is that all miners are running at</p> <p>11 100 percent for the system to know how much load it's</p> <p>12 consuming?</p> <p>13 A That's the maximum load.</p> <p>14 Q Yeah. My question to you was, does Mr. Storms'</p> <p>15 system, as you've described it, have the ability to</p> <p>16 determine in realtime the actual amount of power that it</p> <p>17 is using?</p> <p>18 A To determine in realtime the actual amount of</p> <p>19 power that each individual miner is using, to determine</p> <p>20 the amount of power that's being spent -- that's being</p> <p>21 burned in the PDU, to determine which actual amount of</p> <p>22 power?</p> <p>23 Q To determine the total amount of power that his</p> <p>24 system is consuming.</p>

<p style="text-align: right;">Page 130</p> <p>1 A I don't know if he's got a gross power monitor 2 on there. I don't know if he meters the consumption -- 3 the instantaneous consumption. I don't know. I'd have 4 to look at the code.</p> <p>5 Q Does Mr. Storms' system to your understanding 6 have the ability to determine how much power the miners 7 within his system are using as a group, as opposed to an 8 individual miner?</p> <p>9 A It makes assumptions about different types of 10 miners and how much power they would consume. So it can 11 be reconfigured for different miners of different 12 characteristics. It can be reconfigured for different 13 groups of miners that have different characteristics and 14 different power or gross power targets, and so on.</p> <p>15 Q But all of that would be projected power 16 consumption based on the characteristics of the different 17 miners. I'm talking about an actual operation if his 18 system had been used to mine bitcoins. Does it have the 19 ability to determine the amount of power the miners are 20 using at a given point in time?</p> <p>21 A I don't know if he has the ability to sub meter 22 the miners. You'd have to have a -- you'd have to have a 23 device that measured amount of current that was being 24 consumed and the voltage that was being provided to the</p>	<p style="text-align: right;">Page 132</p> <p>1 intelligent PDU or whether his PDUs were off the shelf?</p> <p>2 A It looked to me like he was building custom 3 PDUs in some respect.</p> <p>4 Q And that's -- Was he building it or was 5 Mr. Hustler building it?</p> <p>6 A Who?</p> <p>7 Q Mr. Jason Hustler. You don't know who that is?</p> <p>8 A I don't know.</p> <p>9 Q Do you know who Mr. Jason Hustler is?</p> <p>10 A It sounds familiar, but I'm not recalling what 11 part he played in this right now.</p> <p>12 Q Do you know if Mr. Storms or Mr. Hustler were 13 building PDUs in the same physical location as his 14 simulation was running?</p> <p>15 MR. RICORDATI: Objection. Assumes facts not in 16 evidence.</p> <p>17 THE WITNESS: I can't speak to that.</p> <p>18 MR. NELSON: Q So you don't know?</p> <p>19 A I don't know anything about their physical 20 construction.</p> <p>21 Q Do you know if under Mr. Storms' system the 22 system -- do you know whether it was impossible under 23 Mr. Storms' system for the -- to tell the miners to 24 maintain a certain amount of load?</p>
<p style="text-align: right;">Page 131</p> <p>1 inlet power system of each miner. I don't know if his 2 system has that.</p> <p>3 Q Do you know if you identified anywhere in the 4 source code where his system had the ability to report 5 the amount of power actually being consumed by the 6 system?</p> <p>7 A Well, since his was a simulation, it couldn't 8 determine the actual amount of power being consumed. It 9 would be an estimate. I don't know if he envisioned in 10 his system the ability to get feedback from those 11 devices, but that would drive the overall system cost up 12 because you'd have to have a sensor on the power inlet or 13 -- you have sensor on the outlet of the PDU. If the PDU 14 is smart and it can report that, then he can get that off 15 the PDU -- off the PDU interface. So from that 16 perspective, yes. If the PDU was not smart, then he'd 17 have to meter the device where the power is being 18 consumed, and I don't know if his system thought about 19 that.</p> <p>20 I think he may have been considering an 21 intelligent PDU where he could monitor characteristics 22 off the PDU and get the PDU to tell him how much it's 23 putting out on each port.</p> <p>24 Q Do you know whether he was considering an</p>	<p style="text-align: right;">Page 133</p> <p>1 MR. RICORDATI: Objection. Vague.</p> <p>2 THE WITNESS: Can you restate that?</p> <p>3 MR. NELSON: Q Yeah. Do you know whether it would 4 be possible -- whether it was impossible under 5 Mr. Storms' system to instruct the miners to maintain a 6 certain amount of load?</p> <p>7 MR. RICORDATI: Objection. Vague.</p> <p>8 THE WITNESS: You mean to consume a certain amount 9 of power?</p> <p>10 MR. NELSON: Q I mean -- When we've discussed the 11 word consume, that has multiple meanings here. So to 12 constantly -- Well, let me ask a different way.</p> <p>13 Do you know whether Mr. Storms' systems could 14 instruct the miners to maintain a certain load, whether 15 that was -- whether that was impossible for his system to 16 do?</p> <p>17 A No, his system could do that.</p> <p>18 Q Do you know whether he said his system could do 19 that or not?</p> <p>20 A I think it's pretty clear from the code.</p> <p>21 Q Would you be surprised if he said it was 22 impossible for his system to do that?</p> <p>23 A I'd have to know what the context was.</p> <p>24 Q So you won't know one way or the other?</p>

<p style="text-align: right;">Page 134</p> <p>1 A Well, it seems to me based on looking at the 2 code that it would have been possible for his system to 3 instruct the miner to maintain a certain load. Now, 4 depending on what maintain a certain load means, right, 5 it's highly dependent on the structure of the computer 6 system. It's really difficult to say to an arbitrary 7 computer system, consume this much power, and only this 8 much power. That's really tough. 9 Q What about his total build? So let's say he 10 had -- let's say hypothetically he had a -- his system 11 was 50 miners. Do you know whether his system -- under 12 that system it would be possible to maintain a constant 13 load? 14 A What do you mean by constant load? Constant 15 power usage? 16 Q Power usage, yes. 17 A Well, if the things are on, their power supply 18 is going to burn a certain amount of power, their 19 operating system function is going to burn a certain 20 amount of power, even if they're quiescent. If they use 21 -- I mean, there's so many variables in this, it's 22 really, really difficult without specific monitoring on 23 the internals of a computer system to tell it to consume 24 a certain amount of power. It's really difficult.</p>	<p style="text-align: right;">Page 136</p> <p>1 merely one of ordinary skill in the art would have been 2 required to modify the existing system -- I think I read 3 that wrong. Hold on. Let me start over. 4 In paragraph 63 you state: To the extent this 5 feature, meaning claim element C -- 1(c) is found not to 6 be explicitly described in the Bearbox disclosure, it is 7 my opinion that merely ordinary skill would have been 8 required to modify the existing system to explicitly 9 incorporate this feature. 10 Do you see that? 11 A Uh-huh. 12 Q So is it your opinion that this feature is 13 found in Mr. Storms' system based on paragraph 62 or that 14 it's not found but would be easy to do as stated in 15 paragraph 63? Because it seems like paragraph 62 and 63 16 contradict each other. 17 A Contradict each other. 18 MR. RICORDATI: Objection. Mischaracterizes the 19 report. 20 THE WITNESS: I don't think those two paragraphs 21 contradict each other. 22 MR. NELSON: Q Well, is it your opinion that claim 23 element 1(c) is or is not found in Mr. Storms' system? 24 A Okay. Claim 1(c) -- element 1(c) says:</p>
<p style="text-align: right;">Page 135</p> <p>1 Q And sort of by extension then it's really 2 difficult to tell it to maintain a certain amount of 3 power, to maintain the same -- using the same amount of 4 power? 5 A You can -- Well, there are certain power 6 amounts that you can tell it to go to, right. You can 7 tell it -- depending on the structure of the computer 8 system, right, you can always tell it to turn off, and 9 that's specific amount of power, zero. So it could do 10 that. 11 Q That's no load. I'm talking. 12 A It's consuming a certain amount of power. 13 Right. You can tell it to be quiescent, and that will 14 give you a better -- that will give you a better -- you 15 can tell it to stop performing anything except its 16 operating system activity, that will give you a pretty 17 good idea about how much power it consumes. But, again, 18 it wouldn't be constant. You'd have to average it over a 19 certain period of time because it's never constant. So 20 the question really -- There's no possible way to answer 21 the question. There's too many other considerations. 22 Q So turning to paragraph 63. You state: To the 23 extent this feature is not found to be explicitly 24 described in Bearbox disclosure, it's my opinion that</p>	<p style="text-align: right;">Page 137</p> <p>1 Receive power option data based at least in part on a 2 power option agreement. His system was a simulation, so 3 it didn't actually have a power option agreement, but it 4 was able to receive power option data on simulated power 5 agreement. Wherein, the power option data specifies, 1, 6 a set of minimum power thresholds -- he had has minimum 7 power thresholds -- 2, a set of time intervals -- he 8 clearly had time intervals -- where each minimum power 9 threshold in the set of minimum thresholds is associated 10 with a time interval and set of time intervals. Yes, his 11 system did that. 12 Q So his system did all those things except for 13 it couldn't receive power option data based on at least, 14 in part, on a power option agreement because it was a 15 simulation, is that fair? 16 A It was a simulation, and to receive power 17 option data based on a power option agreement, you have 18 to stroke the power option agreement. And to my 19 knowledge he never had a stroked power option agreement, 20 but his system would have been capable of receiving that 21 data if he had. 22 Q In your view would a POSITA -- you used the 23 word POSA, P-O-S-A, all caps -- would a POSITA have had 24 knowledge of power option agreements?</p>

<p style="text-align: right;">Page 138</p> <p>1 A I think -- yeah.</p> <p>2 Q Why do you say that based on your level of</p> <p>3 skill?</p> <p>4 A Somebody who's -- somebody's who familiar with</p> <p>5 the way that power markets work would understand that you</p> <p>6 could have a power option agreement.</p> <p>7 Q And in your view does a -- because I don't</p> <p>8 recall in your definition of a person of ordinary skill a</p> <p>9 requirement that they be familiar with power option --</p> <p>10 with power markets.</p> <p>11 A Well, a power market is just another type of</p> <p>12 market. We're buying future -- you're paying a price</p> <p>13 today for something that's going to happen tomorrow.</p> <p>14 This is a common business construct. So anybody who was</p> <p>15 familiar with that business construct and knew how to</p> <p>16 apply it into the power space would understand that.</p> <p>17 This is not -- this option agreement stuff is a business</p> <p>18 construct.</p> <p>19 Q So in Footnote 4 you say you discussed these</p> <p>20 issues and facts with Frank McCamant on April 1st. Do</p> <p>21 you see that?</p> <p>22 A Yes.</p> <p>23 Q How long did you talk to Mr. McCamant?</p> <p>24 A I don't -- I don't recall. Maybe -- 30 minutes</p>	<p style="text-align: right;">Page 140</p> <p>1 And so, you know, it's general domain familiarity and</p> <p>2 conversations with colleagues.</p> <p>3 Q So going to paragraph 62 again, the last</p> <p>4 portion of it. The last sentence says: The Bearbox</p> <p>5 system also included custom PDU software capable of</p> <p>6 providing quote -- capable of providing fine grain load</p> <p>7 control, parentheses i.e., the ability to turn on some</p> <p>8 but not all of the miners, closed parentheses.</p> <p>9 A This is paragraph 62?</p> <p>10 Q The last sentence of 62.</p> <p>11 And was configured to work modularly with a</p> <p>12 variety of different miners that had different power</p> <p>13 requirements.</p> <p>14 Do you see that?</p> <p>15 A Yes.</p> <p>16 Q So the fine grain load control there, are you</p> <p>17 -- the definition of it are you talking about what's in</p> <p>18 the i.e., paragraph, the ability to turn on some but not</p> <p>19 all of the miners? Is that how -- what you're defining</p> <p>20 fine grain load control to be in the context of your</p> <p>21 opinion here?</p> <p>22 A I may -- I believe i.e. means such as or for</p> <p>23 example. So the ability to turn on some but not all the</p> <p>24 miners is a for example that helps to define fine grain</p>
<p style="text-align: right;">Page 139</p> <p>1 maybe, an hour.</p> <p>2 Q Did you only talk to him once?</p> <p>3 A I've talked to him a couple times. I mean --</p> <p>4 I'm aware of him. I have talked to him previously. I</p> <p>5 think I've only talked to him one time with respect to</p> <p>6 this case, but I'm not exactly sure. I know I talked to</p> <p>7 him on this date because we specifically talked about</p> <p>8 some of these concepts.</p> <p>9 Q Is it your understanding for, example, of QSEs</p> <p>10 -- Q-S-E, qualified scheduling entities, does that come</p> <p>11 from Mr. McCamant?</p> <p>12 A Does the concept of QSE come from McCamant?</p> <p>13 No, that's a concept that comes from ERCOT.</p> <p>14 Q I'll ask a different question. Were you aware</p> <p>15 of quality scheduling entities before this case and</p> <p>16 before talking to Mr. McCamant?</p> <p>17 A I was aware that this capability -- I was aware</p> <p>18 that this market existed and that these capabilities</p> <p>19 existed, but I wasn't aware of the specific terminology.</p> <p>20 Q Prior to this case how were you aware that --</p> <p>21 of -- that this market existed and the capabilities</p> <p>22 existed?</p> <p>23 A I work with people who are in the electric</p> <p>24 power space some of whom are very familiar with ERCOT.</p>	<p style="text-align: right;">Page 141</p> <p>1 load control. It's the complete -- it may not be the</p> <p>2 complete extent, but it's an example of that.</p> <p>3 Q Okay. So you're using -- where you use the</p> <p>4 term i.e. in this report, you're using it as for example?</p> <p>5 A I -- hopefully I used it right.</p> <p>6 Q That's e.g.</p> <p>7 A Okay. I get those backwards all the time.</p> <p>8 Q So in the context of this report, where I see</p> <p>9 the terms i.e., I should read it as for example?</p> <p>10 A The i.e. means as an example or -- I can't</p> <p>11 think of a better way to explain that.</p> <p>12 Q It sounds like the answer is yes. I just want</p> <p>13 to make sure I'm understanding --</p> <p>14 A Well, I don't -- well, I get them confused all</p> <p>15 the time. They may go different directions, but I kind</p> <p>16 of use them interchangeably as a for example because I</p> <p>17 get confused as to exactly what their precise meaning is.</p> <p>18 They're very closely related to me. I'm not a Latin</p> <p>19 expert.</p> <p>20 Q Let's turn to claim element 1(d) beginning</p> <p>21 paragraph 65. So the first sentence -- beginning of</p> <p>22 paragraph --</p> <p>23 A Beginning paragraph -- do you want 1(d) or</p> <p>24 paragraph 65?</p>

<p style="text-align: right;">Page 142</p> <p>1 Q Well, you have 1(d) as a heading, and then 2 paragraph 65 is your opinion about it, right? 3 A Yeah. 4 Q You talk about the systems conceived of and/or 5 developed by Bearbox satisfy this aspect of Claim 1 at 6 least because the Bearbox system calculated profitability 7 at distinct time intervals, each with an associated power 8 threshold, such as comparing mining profitability based 9 on, inter alia, current power usage and energy price 10 conditions on the one hand with profitability based, 11 inter alia, on expected future power usage and energy 12 price conditions. 13 Do you see that? 14 A This is paragraph 66? 15 Q Yes. 16 A Yeah. 17 Q So where does the system calculate expected 18 future power usage? 19 A If you look at the outputs of the system, it 20 calculates power that would have been -- that would be 21 used for bitcoin mining or that could be used for bitcoin 22 mining versus -- it calculates power that could be used 23 for bitcoin mining and the resulting profit versus not 24 using the power for bitcoin mining and selling it back --</p>	<p style="text-align: right;">Page 144</p> <p>1 A Yes. Wherever the power price is being fished 2 from. 3 Q I've asked a compound question so let me ask a 4 better question. 5 Is the energy price condition you're talking 6 about there being the realtime market price the realtime 7 market price for a particular node? 8 MR. RICORDATI: Object to form. 9 THE WITNESS: If I'm understanding your question 10 correctly, I believe that's right. 11 MR. NELSON: Q And where is that price coming from 12 in his simulation? 13 A It's -- there's a vector of values that are -- 14 that are retrieved either statically or dynamically that 15 change over time that are used to create that calculation 16 in the trade off. 17 Q What is the current power usage in your 18 sentence in that paragraph 66? 19 A That would be the amount of power essentially 20 used by the bitcoin mining devices. 21 Q And how is Mr. Storms obtaining that number, 22 the amount of power actually being used by the bitcoin 23 mining device? 24 A He can't obtain the power actually used because</p>
<p style="text-align: right;">Page 143</p> <p>1 selling it on the market. So the power that could be 2 used for bitcoin mining. 3 Q That's the expected future power usage? 4 A Yeah. 5 Q And how is that calculation done? 6 A We'd have to look specifically at the code to 7 see the equation, but it's amount of power used by a 8 certain miner for a certain time. How much power does 9 this miner use over what time period. 10 Q An individual miner? 11 A For each miner. That's a unit ladder thing, 12 right. Power, time, dollars. 13 Q Right after that, there -- you see the term 14 energy price condition. What is the energy price 15 condition that you're talking about? 16 A That's the real time power price. 17 Q At a particular node? 18 MR. RICORDATI: Object to form. 19 MR. NELSON: Q Is that at a particular node? 20 A That's the realtime power price that's received 21 from the marketplace. 22 Q But my question for you is, that's a realtime 23 power price received from the marketplace at a particular 24 node or something else?</p>	<p style="text-align: right;">Page 145</p> <p>1 there weren't any actual miners because it was a 2 simulation. So there's an estimate of what the power 3 would be used by the miners. And he's using corner case 4 or best case/worst case analysis where he's using maximum 5 -- looks like to me he's using maximum values, worst 6 case, maximum value -- maximum power used by the miners. 7 Q And so he's basically making an assumption that 8 the miners would be running flat out, and if they're 9 running flat out, they use so much power? 10 A Yes. That's the envelope -- that's the 11 envelope calculation. 12 Q And if that assumption were not true, for 13 example, if his system were operating in the real world 14 and a -- some group of miners had overheated or weren't 15 running, how could -- how would he know that? 16 A How would he know what? 17 Q How would he -- how would he -- how would his 18 system have calculated the actual current power usage if 19 it was running in the real world? How would it have 20 calculated the actual amount of power the system is 21 using? 22 A I think we already addressed this. There's 23 several different ways of doing that. One -- probably 24 the most efficient way is to have a smart PDU that can</p>

<p style="text-align: right;">Page 146</p> <p>1 monitor its output ports and you query the PDU to find 2 out how much power is being consumed. That's the easiest 3 way. 4 Harder way is you got a dumb PDU, you got to go 5 put a sensor on a device. Hard way is you got to crack 6 the computer open and put a bunch sensors inside of it. 7 Q And do you -- Are you aware of any evidence in 8 this case that Mr. Storms had done any of those things 9 such that his system could, if implemented, actually 10 figure out the amount of power it was consuming -- it was 11 using at a specific point in time? 12 A I believe he was anticipating using smart PDUs 13 that he could query their output ports. I think that's 14 the simplest, most straightforward way to do it. 15 Q And your belief that he was doing that is based 16 on what? 17 A It's based on my recollection right now of what 18 I remember in the code. I believe that's what was going 19 on. To make it make more sense we'd probably have to 20 look at the appendix and see which modules were related 21 and see if there's specific reference to -- I think the 22 PDU interface modules are using a mod bus protocol which 23 can talk -- which with very little modification could 24 talk to a mod bus device to determine how much power is</p>	<p style="text-align: right;">Page 148</p> <p>1 Q Okay. And to verify that assumption I would 2 need to -- you and I would need to look at the code and 3 go through the specifics? 4 A It would get more detailed than that. We'd 5 have to look at the PDUs that he envisioned looking at. 6 I remember on a spec sheet there's a description of 7 something that appears to be a PDU. We'd have to look at 8 that specific PDU, see what the characteristics of that 9 PDU had. We'd have to look at the code and see exactly 10 what kind of queries the code did for that PDU. But 11 based on what I'm seeing there, it would be extremely 12 easy to -- He's using an intelligent PDU, it's mod bus 13 capable. You can query those PDUs all day long. They 14 got all kinds of data in them so it would be no big deal 15 to get that data out of there. That's why I say I think 16 he's assuming an intelligent PDU. 17 Q Did you do any analysis to confirm that he is 18 using or assumed an intelligent PDU? 19 A I think the fact that it's a mod bus capable 20 PDU on an IP network pretty well establishes that. 21 Q Is a mod bus PDU -- is that an off the shelf 22 component you can buy? 23 A Mod bus is a communication standard. You can 24 buy all kinds of things that speak mod bus.</p>
<p style="text-align: right;">Page 147</p> <p>1 being flushed out through its output port. 2 Q What portion of the appendix are you looking 3 at? 4 A I'm looking -- looking right off the back just 5 trying to finds thing on page 94, paragraph A.1, looking 6 in some of the helper functions. I believe those helper 7 functions that are in the bullets down at the bottom of 8 page 94 are actually not part of arb_main. I think 9 they're part of a package that arb_main includes. Again, 10 we have to look specifically at the code to see exactly 11 what the details are. 12 Q All right. So if I'm understanding you 13 correctly, to really understand these details, you and I 14 would need to spend time going through the code? 15 A I think the best way to do that would be to 16 come up with really specific questions and then look at 17 the code and find out specifically in the code where 18 exactly your questions were resolved. But I think for 19 this particular question, it's talking to a mod bus 20 enabled device over an IP network. That means it's 21 assuming some level of intelligence. So that's where I 22 get my interpretation that he's assuming that there's an 23 intelligent PDU that he could talk to and get information 24 from.</p>	<p style="text-align: right;">Page 149</p> <p>1 Q Including PDUs, correct? 2 A Or an adapter that goes onto the PDU. 3 Q So both? 4 A Yeah. Or a relay that controls a PDU. 5 Q So going back to paragraph 66 for a minute. 6 What's being compared there is the current power usage 7 and energy price condition with an expected future power 8 usage and an energy price condition, is that right? 9 A Yeah. 10 Q Is the current power usage -- is that a 11 threshold? 12 A No. That's the power usage that would be of 13 the -- my interpretation of that is the current power 14 usage of the mining device. The current or expected 15 power usage of the mining device. 16 Q My question to you, is that a threshold? 17 A To could considered a threshold. 18 Q Do you consider it a threshold? 19 A It's the power usage. It's the actual power 20 usage of the device. Typically a threshold is something 21 you compare against. So measuring the power usage, not 22 really a threshold. It may be something you compare with 23 a threshold. Does that make sense? 24 Q Yes. In your analysis did you consider how</p>

<p style="text-align: right;">Page 150</p> <p>1 long it would take Mr. Storms' miners to turn off from --</p> <p>2 if they were instructed to turn off from an on state, how</p> <p>3 long it would take them to turn off?</p> <p>4 A You mean -- you mean for the PDU to turn them</p> <p>5 off?</p> <p>6 Q Yeah.</p> <p>7 A That would be instantaneous.</p> <p>8 Q So from --</p> <p>9 A The PDU -- if the power is taken away, the</p> <p>10 computer shuts down almost immediately unless it has a</p> <p>11 battery backup.</p> <p>12 Q Did you consider how long it would take the</p> <p>13 miners to come back up if they were -- if they were in an</p> <p>14 off state and turned -- and put into an on state?</p> <p>15 A That gets into the situation that we were</p> <p>16 talking about before with computer systems. Right.</p> <p>17 Depends on this, depends on that, depends on the other</p> <p>18 thing. And if you -- if you -- if you turn a computer</p> <p>19 system off in a nongraceful fashion, then how long it</p> <p>20 takes for it to come back up is an it-depends question,</p> <p>21 and we have doing down the rat hole of what a computer</p> <p>22 system is.</p> <p>23 Q And did you -- in the context of your analysis</p> <p>24 of Mr. Storms' system turning bitcoin miners off and on,</p>	<p style="text-align: right;">Page 152</p> <p>1 think his simulation had 272 miners or something like</p> <p>2 that. You know, if a few of them -- they're not all --</p> <p>3 even if they're all turned off gracefully, they're not</p> <p>4 all going to come up in the same way at the same time.</p> <p>5 So there's just -- there's no good answer to that</p> <p>6 question.</p> <p>7 Q Well, my question was did you consider it in</p> <p>8 your analysis.</p> <p>9 A I considered it, and I thought well, you know,</p> <p>10 there's too many outstanding variables on that.</p> <p>11 MR. NELSON: Why don't we take a break. You can</p> <p>12 change tapes?</p> <p>13 THE VIDEOGRAPHER: The time is 1:39 p.m. This is</p> <p>14 the end of media unit 2 and we're going off the video</p> <p>15 record.</p> <p>16 (Off the record)</p> <p>17 THE VIDEOGRAPHER: The time is 1:52 p.m. This is</p> <p>18 the beginning of media unit 3, and we're back on the</p> <p>19 video record.</p> <p>20 MR. NELSON: Q So going back to page 66 of your</p> <p>21 report.</p> <p>22 A Okay. Page 66 or paragraph --</p> <p>23 Q Paragraph 66.</p> <p>24 A Yes. Got it.</p>
<p style="text-align: right;">Page 151</p> <p>1 did you consider how long it would take his system to</p> <p>2 turn bitcoin miners on if they were in an off state?</p> <p>3 A Well, to turn them on would be instantaneous.</p> <p>4 To make them operational would depend on all of these</p> <p>5 other conditions.</p> <p>6 Q By turn them on, I mean make them operational.</p> <p>7 A Get them where they can mine bitcoin? Depends,</p> <p>8 depends, depends what operating system -- you out of</p> <p>9 juice?</p> <p>10 THE VIDEOGRAPHER: I have five minutes left.</p> <p>11 THE WITNESS: So it depends what's the operating</p> <p>12 system, what's the disk structure, what kind of</p> <p>13 activities is it contained in, what's the cache</p> <p>14 structure, depends, depends, depends, depends.</p> <p>15 MR. NELSON: Q I understand that.</p> <p>16 A I can't answer that question.</p> <p>17 Q My question is, did you consider that in your</p> <p>18 analysis? I don't see that in your report. Did you</p> <p>19 consider how long it would take them from being -- from</p> <p>20 an off state to being turned on to actually becoming</p> <p>21 operational? Did you consider that in your analysis of</p> <p>22 his system?</p> <p>23 A No, I don't think -- it doesn't have a bearing</p> <p>24 on the approach here. The objective is to have -- I</p>	<p style="text-align: right;">Page 153</p> <p>1 Q So what portion of paragraph 66 addresses the</p> <p>2 claim language wherein the performance strategy comprises</p> <p>3 a power consumption target for the set of computing</p> <p>4 systems?</p> <p>5 A Power consumption target. I think it's -- it's</p> <p>6 associated with current power usage and expected future</p> <p>7 power usage.</p> <p>8 Q So is -- so is one of those the power</p> <p>9 consumption target?</p> <p>10 A Yeah, I think so. There's the -- there's</p> <p>11 the -- there's the power threshold for the time intervals</p> <p>12 and current power usage and energy price conditions. So</p> <p>13 the current power usage would essentially be the target,</p> <p>14 and expected future power usage would be the estimated</p> <p>15 future target.</p> <p>16 Q And how is the associated power threshold</p> <p>17 utilized, if at all, to determine the expected future</p> <p>18 power usage?</p> <p>19 A Well, the power threshold -- if you're assuming</p> <p>20 that the data is coming from a market system, then the</p> <p>21 power threshold is the minimum amount of power that</p> <p>22 you're bound to pay for or consume.</p> <p>23 Q By consume you mean use or sell back, right?</p> <p>24 A Well, again, it depends on -- There's several</p>

<p style="text-align: right;">Page 154</p> <p>1 different things going on here, right. There's the 2 patent language and there's the business of making the 3 contract with the service provider, and I think those two 4 things are separated somehow. For example, if you have a 5 wind turbine, you have a contract with the service 6 provider, and if they're not going to take the power, you 7 shunt it to ground. But -- so they don't have to take 8 the power, but -- 9 Q Well, we're focused on the patent. 10 A You understand what I'm saying? So the patent 11 language -- If you go back to the patent language, it 12 says receive power option data based on an option 13 agreement. So there's a contract that's giving you the 14 data, and the power option data specifies time intervals 15 with thresholds, and the power -- the minimum power 16 threshold is associated with each time interval. So 17 there's time intervals that have thresholds that are 18 associated with them, and the thresholds are minimum 19 power that you're bound to consume. You have paid for, 20 you're going to pay for. 21 Q And -- So we talked about this earlier, bound 22 to consume means you can either use it by running miners 23 or not use it by selling it back, is that right? 24 A Well -- Let's look. Claim 1 says wherein --</p>	<p style="text-align: right;">Page 156</p> <p>1 and I'm trying to draw the distinction between the two. 2 The contract language may not make you use the power. 3 Q Well, the term power option agreement is in the 4 claim, so it has a legal meaning per the claim. What do 5 you understand the legal meaning of power option 6 agreement to be? 7 A I don't know if power option agreement means 8 that you must consume -- you must expend the power that 9 you're contracted to buy. I can't answer that. That's 10 again -- that's a question for McCamant because that's a 11 business -- that's ERCOT marketplace business thing. 12 Q So when you did your analysis of the claim 13 language, did you apply a plain and ordinary meaning of 14 power option agreement as it's used in the patent in the 15 context of your analysis? 16 A It says receive power option database at least 17 in part on a power option agreement where the power data 18 specify a set of minimum power thresholds. Right. So 19 the minimum power thresholds means you must be capable of 20 consuming that. I don't -- What I'm saying is I don't 21 know if it means that you must consume that. You must be 22 capable of consuming that. 23 Q I understand that. But -- 24 A Those are two different things.</p>
<p style="text-align: right;">Page 155</p> <p>1 power consumption target -- you're talking about 2 targets -- for the set of computing systems for each time 3 interval in the set of time intervals wherein each power 4 consumption target is equal to or greater than the 5 minimum power threshold. So the patent doesn't 6 contemplate selling back at all. It talks about 7 consuming that minimum power threshold by those computing 8 devices. I mean, it's -- I just read the claim language 9 there. It says: Minimum power consumption target 10 wherein each target is equal to or greater than the 11 minimum power threshold associated with the time 12 interval. 13 Q So earlier on I had asked you a question what 14 about the plain and ordinary meaning of minimum power 15 threshold was, and you said it was the power that could 16 either be consumed -- that could be consumed either by 17 using it or by selling it back. So -- Are you changing 18 the definition? 19 A No. I'm saying in the power option agreement, 20 I believe I said it's not clear to me whether the power 21 option agreement mandates that you use the power. That's 22 a question for McCamant. I believe I said that several 23 times. I don't know about the contract -- there's a 24 contract, and then there's this language in the patent,</p>	<p style="text-align: right;">Page 157</p> <p>1 Q Do you know -- did you in your analysis 2 determine a plain and ordinary meaning of the word power 3 option agreement -- the phrase power option agreement as 4 used in the patent? 5 A The phrase power option agreement to me in my 6 interpretation means options for buying power ahead of 7 time. To me means that's the plain and ordinary meaning 8 of it, opting to purchase power ahead of time at a 9 certain rate and then I'm going pay for that power, and 10 then when it comes for that time I'm going to pay for 11 that power whether I use it or not. There's a secondary 12 condition which says -- where I'm drawing a distinction, 13 I don't know if you're bound to use that power. Do you 14 understand what I'm saying? I'm going to pay for that 15 power, that's the option. When it comes time, I'm going 16 to pay for that whether I use it or not. I don't have to 17 use it. I can screw in that light bulb and turn off the 18 switch, and I'm still paying for that minimum power. 19 Q So let's go back -- I think in connection with 20 paragraph 62 I had asked you some questions about where 21 -- where the code received the minimum power threshold 22 data. Do you remember that? 23 A Yes. 24 Q And I think you pointed to go -- go to the</p>

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<p>1 appendix on page 94.</p> <p>2 A Yes.</p> <p>3 Q I think you pointed to bullet point 5 as</p> <p>4 providing more information on that.</p> <p>5 A I believe that's where it is, yeah.</p> <p>6 Q So where in bullet point 5 does it identify</p> <p>7 what -- where specifically the power option -- the</p> <p>8 minimum power threshold data is in the code?</p> <p>9 A Well, it talks about the load and the break</p> <p>10 even power price.</p> <p>11 Q But neither one of those is minimum power</p> <p>12 option data? I'm sorry. Neither one of those is a</p> <p>13 minimum power threshold, is it?</p> <p>14 MR. RICORDATI: Objection. Mischaracterizes the</p> <p>15 testimony.</p> <p>16 THE WITNESS: Well -- I believe that the break even</p> <p>17 power price includes the minimum power threshold.</p> <p>18 MR. NELSON: Q The break even power price is a</p> <p>19 price, it's not a minimum power threshold, is it?</p> <p>20 A I'm opting to buy the power ahead of time for a</p> <p>21 certain amount of money and it's a certain amount of</p> <p>22 power. Comes time for that power to be used and paid</p> <p>23 for, I can stick it in my light bulb, I can stick it in</p> <p>24 my bitcoin miners. If I stick it in my bitcoin miner, it</p>	<p>1 less detailed. So if you want ultimate detail, you have</p> <p>2 to keep going down.</p> <p>3 Q So -- But the report is your opinions, and if I</p> <p>4 want to find out what the actual minimum power threshold</p> <p>5 that Mr. Storms' system allegedly uses, if I want to find</p> <p>6 out what that is, I can't find that out from your report,</p> <p>7 I've got to actually look at the code?</p> <p>8 A Right. Because the report summarizes the code.</p> <p>9 The report doesn't include the code. The report includes</p> <p>10 the code by reference with these summaries. Right. So</p> <p>11 it gives you a hunt as to where you'd have to look. It</p> <p>12 looks like you'd look at arb_main_AEC, which is BBSC 016,</p> <p>13 and then you go to 016, line 63 through 69, and then you</p> <p>14 go to 016, lines 15 and 16. And that's probably where</p> <p>15 that would be if you were looking for it. So it gives</p> <p>16 you a really efficient cross-reference to go quickly into</p> <p>17 where the thing is that you're looking for in the code.</p> <p>18 I mean, it's not possible to list every variable name and</p> <p>19 every function call and every bit of code.</p> <p>20 Q So if -- Let me ask you this. If prior to</p> <p>21 Mr. Storms' system, if a company developed a system that</p> <p>22 was capable of turning individual miners on and off</p> <p>23 within a group of miners, taking into account multiple</p> <p>24 variables to determine what strategy should be based on</p>
Page 159	Page 161
<p>1 might make me some money. The bitcoin miner has to make</p> <p>2 enough money to get me past the cost of that power and</p> <p>3 maybe a couple of other things to make a break even. So</p> <p>4 the minimum power threshold is built into that break</p> <p>5 even.</p> <p>6 Q I understand your belief that it's built into</p> <p>7 the calculation. My question is, where in this bullet</p> <p>8 point does it actually tell me what the minimum power</p> <p>9 threshold is?</p> <p>10 A It doesn't tell you specifically in the bullet</p> <p>11 point. I believe what I said before was we'd have to go</p> <p>12 back -- if you want to find the name of the variable or</p> <p>13 whatever, we're going to have to go directly into the</p> <p>14 code and find that. This kind of gives us a hint as to</p> <p>15 where it would be.</p> <p>16 Q So your report doesn't identify specifically</p> <p>17 where the minimum power threshold is in Mr. Storms'</p> <p>18 system, I have to go to the code to actually find that?</p> <p>19 A Yeah. I mean, my approach to doing these</p> <p>20 reports like this, like I explained before, is the code</p> <p>21 is down here and it's got all the detail. There's a</p> <p>22 first level which is the module descriptions that have a</p> <p>23 little more detail, then there's the second level which</p> <p>24 is the stuff that's inserted in the body, which is even</p>	<p>1 what the strategy should be, i.e., to turn the miners off</p> <p>2 and on, based on a company's business strategy, would</p> <p>3 such a system be the same as the Bearbox system?</p> <p>4 MR. RICORDATI: Objection. Vague.</p> <p>5 MR. RICORDATI: Q I can ask that slower if it was</p> <p>6 too quick.</p> <p>7 A Yeah, please.</p> <p>8 Q So, hypothetically, if prior to Mr. Storms'</p> <p>9 system a company developed a system that was capable of</p> <p>10 turning individual cryptocurrency miners on and off</p> <p>11 within a group of miners, and in doing so took into</p> <p>12 account multiple variables to determine the strategy</p> <p>13 should be based on whatever the company's business</p> <p>14 strategy was, so it could be to turn the miners on and</p> <p>15 off, to arb power, to do whatever, would that be</p> <p>16 Mr. Storms' system?</p> <p>17 MR. RICORDATI: Objection. Vague.</p> <p>18 THE WITNESS: I believe Mr. Storms' system to be</p> <p>19 capable of doing that. And additional things.</p> <p>20 MR. NELSON: Q Well, my question -- well, my</p> <p>21 hypothetical -- would that be Mr. Storms' system?</p> <p>22 MR. RICORDATI: Same objection.</p> <p>23 THE WITNESS: No. Mr. Storms' system would be</p> <p>24 capable of doing that, but it would do more.</p>

<p style="text-align: right;">Page 162</p> <p>1 MR. NELSON: Q What additional things would it 2 need do to be -- to encompass Mr. Storms' system? 3 A You mean a system that complies with the terms 4 of the patent? 5 Q No. I mean, that complies with Mr. Storms' 6 system as you understand his system. 7 A I thought you were talking about a system that 8 implemented what the patent said. 9 Q I'm talking about implements -- If there was a 10 system in existence prior to Mr. Storms' system that was 11 capable of turning individual miners on and off within a 12 group of miners, and in making that decision it took into 13 account multiple variables to determine whether or not to 14 do so, would that be Mr. Storms' system? 15 MR. RICORDATI: Objection. Vague. 16 THE WITNESS: Well, this is a hypothetical system 17 that had the ability to turn miners on and off based on a 18 set of conditions. 19 MR. NELSON: Q Correct. 20 A Mr. Storms' system does that and more. 21 Q And what is the and more? 22 A Well, the main thing it does -- one -- some of 23 the primary things it does is optimize the way that the 24 systems are turned on and off or the target power that</p>	<p style="text-align: right;">Page 164</p> <p>1 more often. But if they consume a lot of power, and your 2 power price is high, then maybe you don't want to use 3 them as often. Right. So there's tradeoffs in the 4 bitcoin mining thing that optimizes your bitcoin revenue. 5 There's also tradeoffs that optimize other types of 6 revenue and other types of expenditures. Right. So 7 Mr. Storms' system optimizes a different set of overall 8 things than the system that's described in the patent, 9 which seems to only optimize bitcoin mining. It doesn't 10 even optimize bitcoin mining. 11 Q But my question for you is Mr. Storms' system, 12 is it designed to be implemented at the load side or at 13 the generator side? 14 A I don't -- I don't think it matters. I think 15 it just consumes some amount of electricity and optimizes 16 the cost, optimizes the profit versus the cost. It 17 doesn't matter where in the system it's actually 18 implemented. 19 Q Well, A generator doesn't consume electricity, 20 it provides electricity, fair? 21 A Right. So the system that Storms created is 22 consuming the electricity that's coming from the 23 generator, or it's passing it through and selling it. 24 Q Right. But my point of view is what entity is</p>
<p style="text-align: right;">Page 163</p> <p>1 they consume for the purpose of maximizing total profit, 2 maximizes total profit, not just bitcoin profit. 3 Q And when you say it maximizes profit, it's 4 maximizing total profit for the bitcoin miner? 5 A It's maximizing total system profit, not just 6 bitcoin mining profit. 7 Q No. I understand. But I'm trying to get -- in 8 your understanding what perspective his system operates 9 under. Is it operating from trying to maximize the 10 profit of a bitcoin miner so that if I'm a bitcoin miner, 11 if that's the load, and I'm trying to optimize my profit, 12 I could either do it by mining bitcoin or I can do it by 13 selling back power? Understand? 14 A Mr. Storms' system does that. 15 Q Right. And is that -- 16 A This system does not. 17 Q Is that the perspective that his system is 18 operating from, the perspective of the load in trying to 19 maximize profit for the load? 20 A It's trying to maximize profit for the system, 21 and one element of maximizing the profit is making the 22 most efficient possible bitcoin mining activity. So if 23 you have a lot of computer systems, and some are more 24 efficient at mining bitcoin, then you want to use them</p>	<p style="text-align: right;">Page 165</p> <p>1 implementing Mr. Storms' system in your opinion, the 2 generator or the bitcoin mining? 3 MR. RICORDATI: Objection. Vague. 4 THE WITNESS: That question -- I can't -- I can't 5 answer that question because it doesn't make sense to me. 6 MR. NELSON: Q Why not? 7 A The generator is a generator. It doesn't 8 implement bitcoin mining. A bitcoin miner doesn't 9 implement -- a pure bitcoin miner doesn't implement any 10 sort of optimization. Storms' system is different than a 11 generator and different than a bitcoin miner in that it 12 takes into account all of these conditions and optimizes 13 the amount of revenue. 14 Q I understand your position, but who is going to 15 use Mr. Storms' system, a generator or a bitcoin miner? 16 MR. RICORDATI: Object to form. 17 THE WITNESS: Could be a lot of people use 18 Mr. Storm' system. 19 MR. NELSON: Q Could a generator use it? 20 A I guess. 21 Q How could a generator use it when a generator 22 doesn't mine bitcoin? 23 A A generator could use it as a local load. The 24 generator is selling -- a generating device -- a</p>

<p style="text-align: right;">Page 166</p> <p>1 distributed generating facility is selling power into the 2 power pool. If the price he is getting for selling power 3 into the power pool is lower than the money he can make 4 by bitcoin mining, he is going to shunt his power into 5 the bitcoin miner and mine some bitcoin. But if the 6 power price goes up, he's going to shut his bitcoin 7 miners down and shunt it back into the power pool. A 8 great example of this is a solar panel -- I mean a wind 9 turbine. When wind blows at night, power company 10 doesn't want it. What are you going to do with it? You're 11 going to stick in your bitcoin miner at night. So a 12 generator can use that.</p> <p>13 Q Turn to paragraph 97 of your report. That's 14 Claim 7. Do you see that?</p> <p>15 A Yeah.</p> <p>16 Q So if you turn to paragraph 100, you give -- 17 you give your explanation as to where that claim element 18 is met, and said: For example, the Bearbox system was 19 capable of working with a variety of different miners 20 with different power requirements could dynamically 21 determine profitability at various power thresholds, 22 parentheses, usage, closed parentheses, level and can 23 instruct the miners based on this determination as 24 explained above.</p>	<p style="text-align: right;">Page 168</p> <p>1 A Well, if you think about two power option 2 intervals, for example -- let's just look at two 3 subsequent intervals. Let's say that the power option 4 data is feeding in fast. So during this interval got a 5 minimum threshold of one level, and you've got miners 6 that can mine effectively according to that threshold. 7 Subsequent power interval, the threshold is different. 8 Right. So I've got a collection of miners that I can 9 bring to bear in a different way against that different 10 threshold to optimize my revenue in a different way. I 11 may turn some other ones off that used to be on, I may 12 turn some on that used to be off, I may instruct them to 13 mine in a different way perhaps.</p> <p>14 Q What portion of Mr. -- You identify seven 15 modules here that allegedly have -- have that capability. 16 So the subsequent power option -- the subsequent power 17 option data, that's being received by the system, right?</p> <p>18 A The modules that have the term -- that have the 19 word import in them are consuming marketplace data. The 20 couple of other modules compute the break even point, 21 which is based on the threshold that's in the marketplace 22 data, and the one that has current realtime fetches 23 marketplace data and returns the realtime market price, 24 and then the one that has the break even term in the name</p>
<p style="text-align: right;">Page 167</p> <p>1 Do you see that?</p> <p>2 A Uh-huh.</p> <p>3 Q So how does that meet the claim language of 4 claim -- of Claim 7?</p> <p>5 A Claim 7 says it's a system according to 6 Claim 6. Let me look at Claim 6. Claim 6 says it's a 7 system according to Claim 1. So Claim 6 modifies Claim 1 8 into receiving subsequent power option data to increase 9 or decrease the thresholds. And Claim 7 says -- Claim 7 10 says, 6, which modifies to change the performance 11 strategy in response to changing conditions in the power 12 option data. So the power option data is not fixed. The 13 power option data is now changing over time for 14 subsequent time intervals. Storms' system was capable of 15 doing that. And in cases where it wasn't directly 16 capable of doing that, it would have been very obvious to 17 make small adaptations.</p> <p>18 Q You say it was capable of doing that because it 19 was capable of working with different miners with 20 different power requirements could dynamically determine 21 profitability at various power threshold usage levels.</p> <p>22 A Uh-huh.</p> <p>23 Q So how is -- how is that relating to subsequent 24 power option data?</p>	<p style="text-align: right;">Page 169</p> <p>1 of it performs profitability determinations. I mean, 2 that's exactly the scenario that I just described.</p> <p>3 Q We're -- For the record he's talking about 4 page 33 of his report. Is DA_LMP, day-ahead local market 5 price -- location margin price, is that power -- is that 6 subsequent power option data?</p> <p>7 A Day-ahead seems to be marketplace option data.</p> <p>8 Q Is that the same as subsequent power option 9 data?</p> <p>10 A Yeah. It works every day. Every day it 11 consumes the day-ahead data.</p> <p>12 Q So get current RT_LMP, is RT_LMP also 13 subsequent power option data?</p> <p>14 A Realtime market price.</p> <p>15 Q So that's not subsequent power option data?</p> <p>16 A That's not power option data. That's sell 17 data.</p> <p>18 Q So what do you understand subsequent power 19 option data to be in this claim?</p> <p>20 A That means consuming power option data at a 21 subsequent time.</p> <p>22 Q Well, the claim says receiving the subsequent 23 power option data. So how can that be consuming power 24 option data at a subsequent time?</p>

<p style="text-align: right;">Page 170</p> <p>1 A We're using overloaded terms like consume. So</p> <p>2 the system ingests power option data. It receives. So</p> <p>3 some power option data comes to it at multiple times.</p> <p>4 Maybe this day it's this day-ahead, the next day it's</p> <p>5 that day-ahead.</p> <p>6 Q So what data is that though that's coming?</p> <p>7 What is the subsequent power option data that's coming to</p> <p>8 the system at multiple times?</p> <p>9 A That would be the power price.</p> <p>10 THE VIDEOGRAPHER: Excuse me. Mr. McClellan, could</p> <p>11 you move your mic up a couple inches. Perfect. Thank</p> <p>12 you.</p> <p>13 MR. NELSON: Q Go to paragraph 109.</p> <p>14 A Page 35?</p> <p>15 Q Yeah. So that's talking about Claim 9.</p> <p>16 Claim 9 is on page 34. It says: Wherein the control</p> <p>17 system is a remote master control system positioned</p> <p>18 remotely from the set of computing systems.</p> <p>19 Do you see that?</p> <p>20 A Right.</p> <p>21 Q And you say that using IP-based protocols for</p> <p>22 communication between control systems physically remote</p> <p>23 from the resources under their control is a conventional</p> <p>24 feature of computing systems for decade, right?</p>	<p style="text-align: right;">Page 172</p> <p>1 miner was overheating or something, was it able to</p> <p>2 retrieve that information?</p> <p>3 A I don't know. I know it was able to retrieve</p> <p>4 information from the PDUs. I don't know if it was able</p> <p>5 to retrieve information from the miners. Again, that</p> <p>6 would be a -- that would be a computer system specificity</p> <p>7 that would have to be nailed down. Right. If it was</p> <p>8 used in this operating system or that operating system,</p> <p>9 the retrieval process could be different.</p> <p>10 Q What information was it capable of retrieving</p> <p>11 from the PDUs?</p> <p>12 A It looks to me like it was interfacing with</p> <p>13 mod bus capable PDUs. So it would be capable of</p> <p>14 retrieving anything from a PDU that would be available</p> <p>15 over mod bus. So that would be a characteristic of the</p> <p>16 PDU that was selected.</p> <p>17 Q Do you know what PDUs Mr. Storms was</p> <p>18 considering?</p> <p>19 A I know that there's -- there's a product detail</p> <p>20 sheet or something like that that may detail certain</p> <p>21 kinds of PDUs that he was thinking about, and I know that</p> <p>22 he also prototyped some custom PDUs. So it seems to me</p> <p>23 like he was considering building his own PDUs, but it</p> <p>24 looked like he spec' out a particular one for -- to get</p>
<p style="text-align: right;">Page 171</p> <p>1 A Yes.</p> <p>2 Q So a person of ordinary skill in the art in</p> <p>3 your view would have known the details of Claim 9 prior</p> <p>4 to Mr. Storms' system, is that fair?</p> <p>5 A Yes.</p> <p>6 Q Okay. Do you know if Mr. Storms was ever</p> <p>7 registered with Southwestern Power Pool as a market</p> <p>8 participant?</p> <p>9 A I don't know.</p> <p>10 Q Do you know have an opinion whether that</p> <p>11 mattered or not for practicing the claims of the '433</p> <p>12 patent?</p> <p>13 A I don't think it makes that much difference.</p> <p>14 His system was a simulation. It wasn't actually</p> <p>15 retrieving and implementing stuff. It was simulating a</p> <p>16 concept.</p> <p>17 Q Do you know if Mr. Storms' system retrieved</p> <p>18 information regarding the status of individual miners?</p> <p>19 The simulation --</p> <p>20 A Are you talking about operational status? I</p> <p>21 know that it was configurable to adapt to different</p> <p>22 miners, yes.</p> <p>23 Q What software retriev -- I'm talking about</p> <p>24 retrieving information. Let's say, you know, whether a</p>	<p style="text-align: right;">Page 173</p> <p>1 to market faster maybe.</p> <p>2 Q Do you know if he ever sold his system at all,</p> <p>3 ever commercialized it?</p> <p>4 A I don't know.</p> <p>5 Q So turn to paragraph 170.</p> <p>6 A Uh-huh.</p> <p>7 Q So in 170 you say: In my opinion, Bearbox</p> <p>8 communicated information about its proprietary technology</p> <p>9 and know-how to Lancium that enabled one of ordinary</p> <p>10 skill in the art to derive the inventions recited in the</p> <p>11 '433 patent or such inventions would have been obvious</p> <p>12 variations in light of the information communicated from</p> <p>13 Bearbox to Lancium.</p> <p>14 Do you see that?</p> <p>15 A Uh-huh.</p> <p>16 Q So is it your opinion that the information that</p> <p>17 Bearbox communicated to Mr. McNamara and Lancium did</p> <p>18 enable or -- did enable one to derive the patents or that</p> <p>19 such inventions simply would have been obvious in light</p> <p>20 of what Storms communicated?</p> <p>21 A Well, in the second sentence, Bearbox</p> <p>22 communicated information about its technology to Lancium</p> <p>23 that enabled one of ordinary skill in the art to derive</p> <p>24 the inventions recited in the claims of the patent.</p>

<p style="text-align: right;">Page 174</p> <p>1 Q Then you have an or, or such inventions would 2 have been obvious variations in light of the information 3 communicated. So which one is it? Did they communicate 4 -- did Mr. Storms communicate the information that 5 enabled one of ordinary skill in the art to derive the 6 inventions, or did Mr. Storms communicate information in 7 your opinion that would have rendered them obvious? 8 A I think that some of the -- some of the 9 information that was communicated was enabling for them 10 to recite in the claims and some information that was 11 communicated was -- was also enabling, but was not 12 necessarily contained in the patent or would not have -- 13 or would have just been obvious variations. 14 Q I'm not sure I'm following your statement 15 there. So the first part of that opinion is Bearbox 16 communicated information about its proprietary technology 17 and know-how to Lancium that enabled one of ordinary 18 skill in the art to derive the inventions recited in the 19 patent. Do you see that? 20 A Uh-huh. 21 Q Then you have an or statement. 22 A Uh-huh. 23 Q Or such inventions would have been obvious -- 24 So we're still talking about the inventions of the '433,</p>	<p style="text-align: right;">Page 176</p> <p>1 necessarily associated with stuff that Bearbox may have 2 communicated, but the independent claims and some of the 3 dependent claims, Bearbox communicated information that 4 would be enabling for Lancium to recite those claims. 5 Q Okay. And then certain dependent claims, they 6 weren't -- Bearbox didn't communicate that information, 7 but in your view, those would have been obvious in light 8 of what Bearbox did communicate, is that right? 9 A Yeah. 10 Q So which -- which dependent claims would have 11 been obvious in view of the information Bearbox did 12 communicate? 13 A Let's look at Claim 12, for example. Claim 12 14 is dependent on Claim 1, where the control system gets 15 information from a QSE. I think that was obvious to 16 everybody at that point. I mean, that's a business 17 relationship that has existed for years with ERCOT. That 18 claim -- that dependent claim would have been obvious. 19 Q Any others? 20 A I'm sure there are others. We'd have to go 21 through them all and -- Some of the dependent claims are 22 really redundant. I think Claim 9, which is dependent on 23 Claim 1 is pretty obvious to anybody skilled in the art. 24 Put the control system remotely, that's no big deal.</p>
<p style="text-align: right;">Page 175</p> <p>1 correct? 2 A Yes. 3 Q Would have been obvious in light of information 4 communicated from Bearbox to Lancium. 5 A Right. So the information that Bearbox 6 communicated to Lancium made the -- made the inventions 7 obvious to Lancium, and they used some of that 8 information to claim in the '433 patent. 9 Q That's not -- Okay. Is that how you're reading 10 that? So let me ask you this. So do you believe or is 11 it your opinion that Bearbox communicated information 12 about its proprietary technology and know-how to Lancium 13 that enabled one of ordinary skill in the art to derive 14 the inventions of the '433 patent, not rendering them 15 obvious or anything else, but that the information 16 Bearbox communicated enabled a person of ordinary skill 17 to make the inventions of the '433? 18 A Yes, the information that Bearbox communicated 19 was enabling. 20 Q So Bearbox communicated information in your 21 belief that enabled every single claim element of every 22 single claim of the '433? 23 A Well, there are three independent claims. I 24 think there's some dependent claims that are not</p>	<p style="text-align: right;">Page 177</p> <p>1 Claim 13 is dependent on Claim 1 where the 2 power option data specifies subsequent thresholds. I 3 mean, that's kind of obvious in the data that's received. 4 That would have been obvious. Plus it's obvious from 5 Bearbox code that it can be iterated. I mean, 15, this 6 is Claim 1 duration of the time intervals corresponds to 7 a -- Claim 15 -- I'm just reading Claim 15 -- is 8 dependent on Claim 1 where a total duration of the time 9 intervals corresponds to a 24-hour period. I mean, 10 that's -- 11 Q Any others? 12 A I'm sure there are. You want me to just keep 13 going through them? 14 Q Yeah. 15 A Claim 3 depends on Claim 2, and it's a pretty 16 obvious variation from Claim 2. 17 Claim 4 depends on Claim 3, and it's a pretty 18 obvious variation where you do priorities. 19 Claim 5 depends on 4, and it just talks about 20 different -- different price thresholds or different 21 minimum price thresholds. That's a pretty obvious 22 variation. 23 Claim 6, again pretty obvious because the 24 subsequent thresholds change.</p>

<p style="text-align: right;">Page 178</p> <p>1 Claim 7 depends on 6 where when the thresholds 2 change you follow -- you change your performance 3 strategy, also pretty obvious. 4 Eight depends on seven. Eight says the control 5 system changes the instructions to the computers when the 6 obvious performance strategy changed because the obvious 7 data was different. 8 I mean, a lot of the dependent claims are just 9 minor variations on a theme. But I mean that's how 10 patents have to be written, so -- but I think a lot of 11 these things were pretty obvious. Once you understand 12 the concept, then you start to see the minor variations, 13 and that's the enabling part. 14 Q So let's talk about the communications between 15 Mr. Storms and Mr. McNamara. We talked a little bit 16 before about they met at or around a conference on 17 May 3rd, correct? 18 A They met -- there was a period of interaction. 19 I don't know when they actually first met and if it was 20 virtual meeting or if they met in person. I know that 21 they met at this conference and that there were -- there 22 was at least one discussion at that conference. There 23 had to have been more than one discussion because they 24 all ended up at dinner. The dinner discussion had to</p>	<p style="text-align: right;">Page 180</p> <p>1 don't recall exactly. And that information described the 2 Bearbox system, it described the concept behind the 3 Bearbox system, and it -- and it described outputs, the 4 optimization outputs of the Bearbox system. 5 Q What my question is, I'm trying to figure out 6 what you relied on to form your opinions. So you relied 7 on an email with some attachments, right? I'll show you 8 these two in a while. 9 A Yeah. 10 Q The email -- But there were text messages 11 between Mr. McNamara and Mr. Storms, correct? 12 A Uh-huh. 13 Q Did you rely on those? 14 A There were communications between that period 15 of interaction that appeared to communicate information 16 back and forth. I think the primary interaction that 17 communicated the most dense information was the spec 18 sheet, the diagram, and the optimization outputs. That 19 was a lot of really dense information in that that would 20 have communicated an enormous amount of information 21 towards the claims in the patent. 22 Q Yeah. I understand you want to advocate for 23 Mr. Storms here with the voluntary thing, but my question 24 simply was what information you relied on in forming your</p>
<p style="text-align: right;">Page 179</p> <p>1 have been subsequent to another discussion where they set 2 the dinner up, and there may have been more. 3 So I don't know all the specifics of the verbal 4 conversations that they had, but I know that there were 5 several interactions during that time, including emails 6 and so on. 7 Q So what did you rely on -- Well, you formed 8 your opinions regarding what Bearbox -- what Mr. Storms 9 communicated to Mr. McNamara, right? 10 A I formed my -- 11 Q You formed opinions -- You can look at your 12 report if you want. It's big Roman Numeral VII on 13 page 53. You form an opinion that Bearbox communicated 14 information to Lancium and that such information enabled 15 -- would have enabled one of ordinary skill in the art to 16 derive the inventions of the '433 patent, or such 17 inventions would have been obvious variations in light of 18 the information. We just talked about all that. 19 A Uh-huh. 20 Q So you relied on something to form those 21 opinions, right? 22 A Well, there was information that was 23 communicated by Storms to Lancium in an email or more 24 than one email, may have been more than one email. I</p>	<p style="text-align: right;">Page 181</p> <p>1 opinions. You relied on an email with attachments, 2 right? 3 A Yeah. It's the background data that's 4 contained in the exhibits of the report. 5 Q You relied on -- Did you rely on text messages 6 between McNamara and Mr. Storms? 7 A Well, there were some messages back and forth 8 between them. I don't remember exactly if they were 9 particularly valuable, but there were interactions. 10 Q You know that there was a dinner that 11 Mr. Storms, Mr. McNamara, and I believe six other people 12 attended, right? 13 A So there was at least one meeting that had -- 14 before that to set up the dinner. So they had several 15 interactions during that period, and I don't know the 16 details of all those interactions. 17 Q What I'm trying to figure out is what details 18 you do know. So you know that there were eight people 19 that went to dinner, and two of them were McNamara and 20 Storms, right? 21 A Yeah, that sounds right. 22 Q And you say that there -- somebody set up the 23 dinner, so they must have met at some point prior to -- 24 A They communicated somehow prior to that. Maybe</p>

<p style="text-align: right;">Page 182</p> <p>1 they met in person, maybe they met over email, maybe -- I</p> <p>2 don't -- they got each other's contact information</p> <p>3 somehow. I don't know the details of that. And then</p> <p>4 they continued to carry out interactions.</p> <p>5 Q So since -- Stop. Since you don't know the</p> <p>6 details, you didn't rely on that former communication for</p> <p>7 anything, right?</p> <p>8 A I relied on the fact that they had multiple</p> <p>9 interactions over a period.</p> <p>10 Q I'm trying to break those interactions up to</p> <p>11 figure out what they all are. Okay. So they met at some</p> <p>12 point to get together for a later dinner, correct?</p> <p>13 A They would have had to.</p> <p>14 Q Yeah. But you don't know anything about that</p> <p>15 prior meeting, do you?</p> <p>16 A I don't know --</p> <p>17 Q You don't know if it was a meeting?</p> <p>18 A There had to have been because you can't set up</p> <p>19 a dinner unless you know somebody.</p> <p>20 Q Do you --</p> <p>21 A Whether it's email or whatever.</p> <p>22 Q Let me finish. You know they talked at some</p> <p>23 point to set up the dinner?</p> <p>24 A Yeah.</p>	<p style="text-align: right;">Page 184</p> <p>1 on Mr. Storms' description of that dinner?</p> <p>2 A Well, there's the depositions that they both</p> <p>3 gave.</p> <p>4 Q So you looked at Mr. McNamara's deposition and</p> <p>5 Mr. Storms' deposition of that dinner?</p> <p>6 A Uh-huh.</p> <p>7 Q And did that -- Other than those descriptions</p> <p>8 of that dinner, did you rely on anything else regard --</p> <p>9 to corroborate their respective testimonies as to what</p> <p>10 happened at that dinner?</p> <p>11 A Well, there's -- if we look through the set of</p> <p>12 exhibits for the report, there's the emails from Storms</p> <p>13 to the other guy, Hakes.</p> <p>14 Q Did you rely on those?</p> <p>15 A There's --</p> <p>16 Q My question is, did you rely on them, the</p> <p>17 Storms to Hakes messages? Did you rely on those in</p> <p>18 forming your analysis?</p> <p>19 A No, it's background information that was</p> <p>20 helpful in understanding the whole scenario.</p> <p>21 Q So no, you didn't rely on Mr. Storms' and</p> <p>22 Mr. Hakes' communications in forming your opinions, is</p> <p>23 that right?</p> <p>24 A Well, these -- this is in the list of materials</p>
<p style="text-align: right;">Page 183</p> <p>1 Q Or maybe it was set up through a third party,</p> <p>2 right? You don't know that, right?</p> <p>3 A Could have been.</p> <p>4 Q Could have been. So you don't know anything</p> <p>5 about -- Whatever the prior meeting is, you're</p> <p>6 speculating about, is that fair?</p> <p>7 MR. RICORDATI: Objection. Mischaracterizes the</p> <p>8 testimony.</p> <p>9 THE WITNESS: There had to have been some prior</p> <p>10 something that would have set up the dinner.</p> <p>11 MR. NELSON: Q Right. You know nothing about</p> <p>12 that, correct?</p> <p>13 A I know that there was a conference that they</p> <p>14 all attended.</p> <p>15 Q Talking about a meeting, not -- I'm talking</p> <p>16 about how Mr. Storms and Mr. McNamara met. Do you know</p> <p>17 anything about that whatsoever?</p> <p>18 A No.</p> <p>19 Q Okay. You know they had a dinner at some point</p> <p>20 after that with other people, correct?</p> <p>21 A Right.</p> <p>22 Q What do you know about that dinner?</p> <p>23 A I just know that they had the dinner.</p> <p>24 Q Okay. Did you rely at all on Mr. McNamara --</p>	<p style="text-align: right;">Page 185</p> <p>1 considered for the report.</p> <p>2 Q I'm asking you what you relied on in forming</p> <p>3 your opinions. Did you or did you not rely on the text</p> <p>4 messages back and forth between Mr. Hakes and Mr. Storms?</p> <p>5 A Well, they were information that was considered</p> <p>6 in writing the report and in understanding the entire</p> <p>7 background. I don't -- We're going to have to define</p> <p>8 what rely on means because -- Did I look at them? Yeah,</p> <p>9 I looked at them. Were they really important? Depends.</p> <p>10 Some of them were more important than others. I think</p> <p>11 the email -- the email attachment with the system</p> <p>12 specification and the diagram and the simulation outputs</p> <p>13 I think was a very important interaction.</p> <p>14 Q I understand that. Again, I know you're trying</p> <p>15 to advocate for that e-mail. I get that. But I'm trying</p> <p>16 to understand all of the things that went into you</p> <p>17 forming your opinion.</p> <p>18 A Well, they're all listed here in materials</p> <p>19 considered. You're asking me to prioritize these, tell</p> <p>20 me which ones are more important, right.</p> <p>21 Q Let me finish my question, Doctor. I'm asking</p> <p>22 you what you actually relied on as opposed to, okay, I</p> <p>23 looked at a bunch of stuff. That's considered. What it</p> <p>24 is you relied on.</p>

<p style="text-align: right;">Page 186</p> <p>1 A Well, the email information was heavily relied 2 on.</p> <p>3 Q Okay.</p> <p>4 A The Python code was heavily relied on.</p> <p>5 Q That wasn't communicated by --</p> <p>6 A Communicated -- communicated. The structure of 7 the patent itself.</p> <p>8 Q That wasn't communicated.</p> <p>9 A No, but we're talking about things that inform 10 the structure.</p> <p>11 Q I'm not -- I'm asking what you relied on to 12 conclude that Mr. Storms communicated information 13 sufficient to enable one of ordinary skill in the art to 14 create the patent.</p> <p>15 MR. RICORDATI: Objection. Asked and answered and 16 argumentative.</p> <p>17 THE WITNESS: So all of this data. There's all 18 kinds of information in here that's -- that was 19 communicated that was important in forming those 20 opinions. You're trying to draw a distinction between 21 relied on and considered, and I don't know exactly how to 22 draw that distinction.</p> <p>23 MR. NELSON: Q Let me ask you a different way. 24 So other than Mr. Storms' testimony --</p>	<p style="text-align: right;">Page 188</p> <p>1 conference, Mr. McNamara continued to press Mr. Storms 2 for additional details about Bearbox's technology.</p> <p>3 Do you see that?</p> <p>4 A Uh-huh.</p> <p>5 Q So what led you to use the word press 6 Mr. Storms for additional details?</p> <p>7 A Well, in response Storms provided all of these 8 specifications in a proprietary data set. There were 9 requests for information and he provided the data. I 10 mean, he doesn't just provide the data without some sort 11 of request.</p> <p>12 Q But you didn't use the word request. You used 13 the word press which has -- What did you mean by the word 14 press there?</p> <p>15 A Asking questions. Trying to find out more 16 information.</p> <p>17 Q So -- so it would be equally as correct in your 18 opinion to have said that Mr. McNamara continued to ask 19 Mr. Storms for additional details or requested additional 20 details?</p> <p>21 A Well, I think if you -- I think this is from 22 the deposition. If you back up to page 173, it talks 23 about his discussions being extremely specific, and he 24 talked -- he basically shared with him the general</p>
<p style="text-align: right;">Page 187</p> <p>1 deposition testimony and Mr. McNamara's deposition 2 testimony about what happened at the dinner, did you 3 consider anything else in corroborating whose version of 4 what happened at the dinner is more likely correct?</p> <p>5 MR. RICORDATI: Objection. Asked and answered.</p> <p>6 THE WITNESS: Did I consider whose version of the 7 dinner -- I think it's unlikely that an enormous amount 8 of pertinent information was communicated at the dinner. 9 The enormous amount of information that gets communicated 10 is done by email. That's why -- So if we're talking 11 about -- if we're going to do a binary rely on, then the 12 binary rely is on the email and nothing else. If we're 13 going to gradate it further than that, then I have to 14 know what your definition of rely on is so that I can 15 establish how deep in that set we need to go, because 16 there's clearly some things in here -- you know, the 17 dinner -- I know that the dinner happened, but dinners 18 like that there's not normally an enormous amount of 19 information that's passed back and forth. The email was 20 -- was really important.</p> <p>21 MR. NELSON: Q All right. All right. Fair 22 enough. Go to paragraph 175 of your declaration. You 23 see this is now picking up after the dinner has happened. 24 And it says: It's my understanding that following this</p>	<p style="text-align: right;">Page 189</p> <p>1 architecture of the system and how the system worked and 2 what outputs it could produce, so --</p> <p>3 Q That's not my question.</p> <p>4 A -- they asked for more information.</p> <p>5 Q That's not my question. My question was 6 relating to it's my understanding -- You used the word 7 press for additional details. Let me ask it a different 8 way here. Let me find the text chain here.</p> <p>9 Let me -- let me hand you what's been 10 previously marked as Defendant's Exhibit 55.</p> <p>11 (Exhibit 55 tendered to the witness)</p> <p>12 Q That's a text chain between Mr. Storms and 13 Mr. McNamara. Do you see that?</p> <p>14 A Uh-huh.</p> <p>15 Q And so I'll represent to you that the dinner 16 happened -- March -- I'm sorry -- on May 3rd of 2019.</p> <p>17 A Uh-huh.</p> <p>18 Q So the next day, picking up on the top of Bates 19 No. BB 10004960, Mr. Storms sends a text to Mr. McNamara 20 that says Storms.</p> <p>21 Do you see that?</p> <p>22 A Uh-huh.</p> <p>23 Q And so a day later McNamara says: Great to 24 meet you at the conference. This is me.</p>

<p style="text-align: right;">Page 190</p> <p>1 Do you see that?</p> <p>2 A Uh-huh.</p> <p>3 Q So McNamara sends his LinkedIn information. Do</p> <p>4 you see that?</p> <p>5 A Uh-huh.</p> <p>6 Q So later the same day Storms comes back: I'm</p> <p>7 not on LinkedIn, but you've got my personal number. I'll</p> <p>8 put some feelers out to summon my PM friends this week</p> <p>9 about what we talked about Friday night. TTY soon.</p> <p>10 Do you see that?</p> <p>11 A Yes.</p> <p>12 Q Do you know what PM friends he's talking about</p> <p>13 there?</p> <p>14 A No.</p> <p>15 Q Do you know what PM stands for?</p> <p>16 A Can mean a lot of different things.</p> <p>17 Q So the answer is no, you don't?</p> <p>18 A I can't -- I can't speculate what it's for from</p> <p>19 this. There's not enough context.</p> <p>20 Q Okay. So later on same day, McNamara responds</p> <p>21 back: That's great. I think your boxes might have some</p> <p>22 benefits versus the ones we are doing with JB driver.</p> <p>23 Do you see that?</p> <p>24 A Uh-huh.</p>	<p style="text-align: right;">Page 192</p> <p>1 Q Right. But I'm talking about Storms here.</p> <p>2 Because Storms send back: I can send you the specs on</p> <p>3 the boxes/PDUs/logic design, right?</p> <p>4 A Uh-huh.</p> <p>5 Q So based on Storms' language, Storms is</p> <p>6 separating PDUs and logic design from boxes, is that not</p> <p>7 fair?</p> <p>8 A I think that's a -- I think that's a semantic</p> <p>9 hair splitting. I think the boxes had to do with the --</p> <p>10 to me, my interpretation, which everybody can have a</p> <p>11 different interpretation, but my interpretation is when</p> <p>12 McNamara says I think your boxes may have some benefits</p> <p>13 versus the ones we are doing with JB driver, what we have</p> <p>14 to do is look at what they were doing with JB driver and</p> <p>15 see if we could get some context out of that, then we</p> <p>16 would understand what McNamara was saying because that's</p> <p>17 the extra context he sent there.</p> <p>18 To me when I read that, without knowing that</p> <p>19 extra context, boxes seems to mean the things that were</p> <p>20 -- the specifications -- the things that were sent in</p> <p>21 specification in response.</p> <p>22 Q Okay. I'm not asking you about McNamara's</p> <p>23 interpretation right now because earlier you said you</p> <p>24 don't know what that is, and, you know, fair point that</p>
<p style="text-align: right;">Page 191</p> <p>1 Q So do you know what Mr. McNamara means by boxes</p> <p>2 there?</p> <p>3 A He's talking about Storms' Bearbox systems, I</p> <p>4 believe.</p> <p>5 Q He's talking about the whole system or he's</p> <p>6 talking about something else, or do you know?</p> <p>7 A It seems -- He says boxes so I assume it's the</p> <p>8 container thing, and the response that Storms has says I</p> <p>9 can send you specs on the boxes PDU's logic and design</p> <p>10 and all that kind of stuff, which is the thing that got</p> <p>11 sent, which is the specification of the container.</p> <p>12 Q Right. But Storms in the next sentence back</p> <p>13 says boxes, and then PDUs are separate, and then logic</p> <p>14 designs are separate? Right? They're separated by back</p> <p>15 slashes?</p> <p>16 A Uh-huh.</p> <p>17 Q So do you understand then what McNamara is</p> <p>18 asking for boxes is different in Storms' mind than PDUs</p> <p>19 and logic design because Storms is listing those separate</p> <p>20 from boxes?</p> <p>21 A I don't know what McNamara was meaning by</p> <p>22 boxes. It sounds like he meant systems that they talked</p> <p>23 about. I mean, it could have -- could have meant a lot</p> <p>24 of different things.</p>	<p style="text-align: right;">Page 193</p> <p>1 you have to -- if you looked at what they were doing with</p> <p>2 JB driver, you know, maybe it's relevant, maybe it's not.</p> <p>3 A I don't know.</p> <p>4 Q But what I'm asking you is based on Storms'</p> <p>5 language, Storms doesn't use the word boxes to encompass</p> <p>6 PDUs and logic design, he lists PDUs and logic design</p> <p>7 separately, doesn't he?</p> <p>8 A Yeah, but down -- he doesn't send it and</p> <p>9 McNamara says, can you send me those box design specs.</p> <p>10 Q I'm not asking what's going later. I'm asking</p> <p>11 you right now --</p> <p>12 A You're asking me to interpret what box means.</p> <p>13 Q I can -- I'm asking you about the line</p> <p>14 5-5-2019, at 7:43 p.m. Storms says: I can send you</p> <p>15 specs on the boxes/PDUs/logic design. And do you have an</p> <p>16 understanding whether Storms is meaning the PDUs and</p> <p>17 logic design are separate from boxes or not?</p> <p>18 MR. RICORDATI: Objection. Calls for speculation.</p> <p>19 Asked and answered.</p> <p>20 THE WITNESS: I can't interpret that. The only</p> <p>21 thing I can interpret is that it didn't get sent and a</p> <p>22 couple days later McNamara requests it again.</p> <p>23 MR. NELSON: Q Right. McNamara requests it again</p> <p>24 two days later, and five days at this point after talking</p>

<p style="text-align: right;">Page 194</p> <p>1 to Storms at dinner, is that right?</p> <p>2 A Whatever the number is.</p> <p>3 Q Well, from May 3rd to May 8th. So do you --</p> <p>4 Based on this text chain do you think he is pressing</p> <p>5 Mr. Storms for details here?</p> <p>6 A Absolutely. The Storms, can you send me those</p> <p>7 box design specs please is a follow up to get information</p> <p>8 that wasn't produced with the first request. It's two</p> <p>9 requests for the same information.</p> <p>10 Q In your view that's pressing?</p> <p>11 A That's pressing.</p> <p>12 Q That's pressing in your view?</p> <p>13 A It's a follow up, and it's got an exclamation</p> <p>14 mark. It's got an intensity to it.</p> <p>15 Q So in your -- Okay. So is your -- that's your</p> <p>16 basis for your using the word that he's pressing</p> <p>17 Mr. Storms for additional details?</p> <p>18 A That's kind of what it looks like from that</p> <p>19 sequence of text messages.</p> <p>20 Q And you have an opinion in here that McNamara</p> <p>21 continued to press Mr. Storms for additional details, and</p> <p>22 so I'm trying to figure out what that opinion is based</p> <p>23 on. And is it based on this text chain is my question?</p> <p>24 A Certainly based in part on this text chain</p>	<p style="text-align: right;">Page 196</p> <p>1 Q Okay. What's the annotated system diagram?</p> <p>2 A That's the second page of the spec sheets.</p> <p>3 Q Okay. So do you think the annotated system</p> <p>4 diagram is part of the spec sheets or something separate?</p> <p>5 A It appears to be a two-page thing. It's</p> <p>6 contained in the report as figure whatever it is on</p> <p>7 page 56. Paragraph 176. That's the annotated system</p> <p>8 diagram. It looks to me like it's part of a two-page</p> <p>9 thing that contains system specs. It looks to me like</p> <p>10 it's an initial version of what you would create as a</p> <p>11 data sheet for a system to go to market with.</p> <p>12 Q I'll mark this as Exhibit 204.</p> <p>13 (Exhibit 204 marked as requested)</p> <p>14 Q So let's talk about Exhibit 204. It's Bearbox</p> <p>15 90 through Bearbox 97 with 97 being produced in native</p> <p>16 format. Just confirm that that's the email that you have</p> <p>17 been discussing.</p> <p>18 A That seems like the email that they talked</p> <p>19 about, the spec sheet and the details and the modeling</p> <p>20 data.</p> <p>21 Q Do you know if -- So the -- page 92 is the</p> <p>22 Storms drawing. In various places you cite -- Let's see</p> <p>23 if I can find an example here. So go to paragraph 186</p> <p>24 real quick.</p>
<p style="text-align: right;">Page 195</p> <p>1 because he asked for the information twice, and when he</p> <p>2 doesn't get it, he increases the intensity of the ask.</p> <p>3 Q Okay. So you're reading -- Okay. So if you go</p> <p>4 back to paragraph 175, you say: In response, Mr. Storms</p> <p>5 providing -- I think it probably should be provides --</p> <p>6 component specifications, an annotated system diagram,</p> <p>7 and a proprietary model data set based on real world</p> <p>8 bitcoin variables such as bitcoin price and network hash</p> <p>9 rate, energy price, time intervals, power thresholds, and</p> <p>10 computed profitability figures.</p> <p>11 Do you see that?</p> <p>12 A Uh-huh.</p> <p>13 Q And is that the email that you're talking</p> <p>14 about?</p> <p>15 A That seems to be the email that's talked about</p> <p>16 in this text chain. He talks about specs on the boxes --</p> <p>17 he talks -- in the text message chain he talks about</p> <p>18 specs of boxes, PDU, logic design, and then he talks</p> <p>19 about redoing a spec sheet and then emailing it, and so</p> <p>20 on. And I think the email happened in between those</p> <p>21 times, or right after the last one.</p> <p>22 Q So looking back at your paragraph 175, what are</p> <p>23 the component specifications that you're talking about?</p> <p>24 A That's the spec sheets.</p>	<p style="text-align: right;">Page 197</p> <p>1 A Okay.</p> <p>2 Q And 186 you give your opinion regarding claim</p> <p>3 element 1(b), and you cite to footnote -- cite</p> <p>4 Footnote 27. Do you see that?</p> <p>5 A Uh-huh.</p> <p>6 Q And Footnote 27 cites to document number 91,</p> <p>7 see also 97, right?</p> <p>8 A Yeah. It should be 91 through 97. I think</p> <p>9 that was the content of the email.</p> <p>10 Q Okay. Well, it's not through. It's 91, and</p> <p>11 then it's see also. And in various other places you cite</p> <p>12 91. Did you -- My question is did you cite 72?</p> <p>13 A I think that's a typo. I think it meant to</p> <p>14 cite 91 through 97. But 91 -- In my mind 91 and 92 are</p> <p>15 two sides of one sheet of paper. So sometimes it gets</p> <p>16 referred to as 91 because it's essentially a data sheet</p> <p>17 mockup.</p> <p>18 Q That's the front side of it. That's 91 in your</p> <p>19 view?</p> <p>20 A I would say that 92 is the front side and 91 is</p> <p>21 the backside. If I were -- if I were making a data</p> <p>22 sheet, I would lead with the diagram and I would have the</p> <p>23 speeds and feeds on the back. So this looks like a data</p> <p>24 sheet because it has the common header on it. So that's</p>

<p style="text-align: right;">Page 198</p> <p>1 the way I interpret that.</p> <p>2 Q Okay. What I'm trying to do is figure out what</p> <p>3 your report is actually citing to.</p> <p>4 A It's trying to cite all of this stuff.</p> <p>5 Q Now, stop. Let me finish my question. So go</p> <p>6 to paragraph 190 as an another example here. Let me know</p> <p>7 when you're at 190.</p> <p>8 A 190, yeah.</p> <p>9 Q So go ahead and read the first sentence to</p> <p>10 yourself that ends at Footnote 30, and then again you</p> <p>11 cite two pages in Footnote 30, 91 and 97. And my</p> <p>12 question is, did you mean to cite page 92 instead of 91?</p> <p>13 A Let me see what actually 97 is. I think it</p> <p>14 meant --</p> <p>15 Q 97 is the spreadsheet.</p> <p>16 A I think it meant to include all of these</p> <p>17 things, but the stuff about the -- I mean, these are</p> <p>18 typos. This -- it probably should have been 91-97 or 91,</p> <p>19 92. But 97 is pretty important here. Probably should</p> <p>20 have been 91-97 because the stuff that has to with fan</p> <p>21 and stuff is really not that important. So it's the</p> <p>22 stuff at the front, which is the two pages that looks</p> <p>23 like a spec sheet, and the spreadsheet that's at the end.</p> <p>24 Q Right. The stuff in the middle is third-party</p>	<p style="text-align: right;">Page 200</p> <p>1 Q So your testimony is that the first two</p> <p>2 sentences -- two lines here: The above diagram</p> <p>3 illustrates a plurality of computing systems that include</p> <p>4 bitcoin miners such as Bitmain, S9 Dragon, T1 or the like</p> <p>5 having different power thresholds refers to day-ahead</p> <p>6 pricing?</p> <p>7 A Sorry. Talking about the miners have different</p> <p>8 power thresholds. Sorry. The miners have different</p> <p>9 power consumption capability, and the Bitmain, S9 just to</p> <p>10 illustrate the fact that in my mind these two things are</p> <p>11 the same thing. The Bitmain, Dragonmint comes from the</p> <p>12 top of 91.</p> <p>13 Q Okay. So the different power thresholds you're</p> <p>14 talking about there, for the miners what are those? I'm</p> <p>15 not asking if you know the specific number. I'm asking</p> <p>16 what you mean --</p> <p>17 A That would be load characteristics.</p> <p>18 Q That would be -- What do you mean by load</p> <p>19 characteristics?</p> <p>20 A Well, different bitcoin miners or different</p> <p>21 computer systems so they have different load</p> <p>22 characteristics. They consume different amounts of</p> <p>23 power, different times and --</p> <p>24 Q When they run?</p>
<p style="text-align: right;">Page 199</p> <p>1 publicly-available documents, right?</p> <p>2 A Yeah. It doesn't really pertain to anything</p> <p>3 valuable here. So typically -- that looks like it to me</p> <p>4 like it was a typo and it would have been 91 through 97</p> <p>5 or 91 -- or 91 assuming that 92 is part of 91, because in</p> <p>6 my mind 91 and 92 are the same piece of paper. So that</p> <p>7 kind of complicates life.</p> <p>8 Q Okay. So let's go to -- let's go 92 then,</p> <p>9 which is the drawing. Paragraph 177.</p> <p>10 A Okay.</p> <p>11 Q So the first sentence you talk about the</p> <p>12 diagram above illustrates a plurality of computing</p> <p>13 systems that include bitcoin miners having different</p> <p>14 power thresholds under the direction and control -- of</p> <p>15 control system composed of various API calls, and it goes</p> <p>16 on.</p> <p>17 Do you see that?</p> <p>18 A Uh-huh.</p> <p>19 Q What are the different power thresholds you're</p> <p>20 referring to?</p> <p>21 A Well, it's receiving day-ahead pricing and</p> <p>22 realtime pricing.</p> <p>23 Q That's --</p> <p>24 A So the thresholds are in the day-ahead pricing.</p>	<p style="text-align: right;">Page 201</p> <p>1 A Yeah.</p> <p>2 Q Okay. Under the direction and control of a</p> <p>3 control system composed of various API calls to retrieve</p> <p>4 relevant information such as realtime and day-ahead</p> <p>5 energy prices, custom PDU logic and -- custom PDU logic</p> <p>6 and fan control to provide fine grain load controls, and</p> <p>7 then it goes on. So let's talk about the -- Is there</p> <p>8 anything in this drawing -- Let me ask a different</p> <p>9 question.</p> <p>10 You see the little lightning bolt arrow on the</p> <p>11 left side of the drawing?</p> <p>12 A Right.</p> <p>13 Q What does that mean? What's that represent in</p> <p>14 your mind?</p> <p>15 A Looks like power being received by the bitcoin</p> <p>16 miners.</p> <p>17 Q That power is then coming from what looks like</p> <p>18 wind mills?</p> <p>19 A It's coming from some generation facility.</p> <p>20 It's illustrated here as generation -- it's called</p> <p>21 generation assets here. Looks like it's illustrated as</p> <p>22 wind mills, but it's a conceptual diagram.</p> <p>23 Q Is there anything in the drawing that indicates</p> <p>24 this system of Mr. Storms -- this drawing could be</p>

<p style="text-align: right;">Page 202</p> <p>1 connected to the grid?</p> <p>2 A Sure. Power could come from the grid.</p> <p>3 Q What in the drawing indicates that?</p> <p>4 A The fact that it's receiving power.</p> <p>5 Q Anything else?</p> <p>6 A Well, it's using day-ahead pricing data.</p> <p>7 Q How does that indicate that it would be -- that</p> <p>8 it could be grid connected?</p> <p>9 A Well, if you're -- if you're in a contract</p> <p>10 where you're consuming day ahead -- you're bidding</p> <p>11 day-ahead pricing data, you have to have the capability</p> <p>12 of consuming that. I think we already established that.</p> <p>13 Q So does that mean that if -- that you must be</p> <p>14 grid connected? My -- first question was what indicates</p> <p>15 that this thing -- that this diagram depicts something</p> <p>16 that could be grid connected. And you gave me two things</p> <p>17 so far. You gave me the lightning bolt, that it got</p> <p>18 power from somewhere, and you indicated that it could get</p> <p>19 day-ahead information. Anything else?</p> <p>20 A Well, it looks like some of the things up on</p> <p>21 left side appear to be -- it says physical</p> <p>22 infrastructure. I interpret that as physical</p> <p>23 infrastructure of the distribution grid. I don't exactly</p> <p>24 know what hardware layer means, but those things could be</p>	<p style="text-align: right;">Page 204</p> <p>1 MR. RICORDATI: Objection. Mischaracterizes the</p> <p>2 testimony.</p> <p>3 THE WITNESS: It consumes three-phase, four-wire</p> <p>4 power which is conventional way for service providers to</p> <p>5 distribute power. That's a pretty heavy indicator that</p> <p>6 it's connected to a grid or connected upstream in a</p> <p>7 private operation or wherever. It could be connected to</p> <p>8 a nonjurisdictional customer. It doesn't really matter.</p> <p>9 It takes three-phase, four-wire power at 415</p> <p>10 phase-to-phase and 240 phase to -- line to neutral.</p> <p>11 MR. NELSON: Q So a little bit later on in</p> <p>12 paragraph 177 you talk about that the diagram illustrates</p> <p>13 custom PDU logic and fan control to provide fine grain</p> <p>14 local control for the miners. Do you see that?</p> <p>15 A Uh-huh.</p> <p>16 Q So there's a bubble on here that says custom</p> <p>17 PDU and fan control logic -- fan control hardware and</p> <p>18 logic. I see that.</p> <p>19 A Uh-huh.</p> <p>20 Q What on here talks about fine grain load</p> <p>21 control for the miners?</p> <p>22 A I thought it was in here in the text.</p> <p>23 It talks about -- the page 91 talks about</p> <p>24 cgminer watchdog, database miner logging, PDU related</p>
<p style="text-align: right;">Page 203</p> <p>1 construed to be transformers -- physical infrastructure</p> <p>2 could be construed to be transformers. The hardware</p> <p>3 layer, it's hot on one side and cold on the other side.</p> <p>4 So it's something that's cooling.</p> <p>5 Q So all of those things in your mind indicate</p> <p>6 that this could be connected to the grid as opposed to</p> <p>7 connected to a generation asset?</p> <p>8 A Yeah. It could be connected to a generation</p> <p>9 asset or it could be connected to a grid asset. It uses</p> <p>10 power. Again, when I got this, this was labeled 91, and</p> <p>11 I couldn't find 92. So I'm thinking of this as one page.</p> <p>12 So you have to look at this part up here. You have to</p> <p>13 look at 91 for this to make sense, and it talks about an</p> <p>14 electrical system that the box contains, three-phase</p> <p>15 four-wire, 415Y/240V, remote dual-outlet power control</p> <p>16 PDUs, all network infrastructure on UPS. So it consumes</p> <p>17 power three-phase, four-wire. Whether that comes from a</p> <p>18 stand alone generation asset, a distributed generation</p> <p>19 asset, a grid, whatever, it consumes 3-phase power.</p> <p>20 Q Right. And the fact that it -- so other than</p> <p>21 the fact that it consumes -- that you understand it</p> <p>22 consumes three-way power, is there anything else that</p> <p>23 indicates this diagram represents something that could be</p> <p>24 directly connected to the grid?</p>	<p style="text-align: right;">Page 205</p> <p>1 mapping, full automation, realtime breakeven monitoring.</p> <p>2 That to me indicates fine grain load control.</p> <p>3 Q So the words --</p> <p>4 A I thought it was in here. I may be missing it.</p> <p>5 Q Well, I don't -- I don't see it in there, but</p> <p>6 the portions of it under the software management bullet</p> <p>7 that you just read, none of those use the words fine</p> <p>8 grain load control, do they?</p> <p>9 A No, it doesn't seem to use those words. I</p> <p>10 thought for sure it was in here like that.</p> <p>11 Q Well, I'll represent to you I looked pretty</p> <p>12 hard and didn't find it. So what is the -- You pointed</p> <p>13 to the software management bullet point on page 91. What</p> <p>14 is the local cgminer watchdog?</p> <p>15 A Cgminer is an open source software that's used</p> <p>16 for mining, and watch dog is -- watchdog is a term that</p> <p>17 means that system will manage itself, and if it goes out</p> <p>18 of -- if it loses power, it will force itself to reboot</p> <p>19 when the power comes back on, or it will watch when sub</p> <p>20 processes die and it will restart those sub processes. I</p> <p>21 mean, watchdog is a monitoring kind of thing that keeps</p> <p>22 the software or the system functioning.</p> <p>23 Q Watchdog doesn't have anything to do with fine</p> <p>24 grain load control, does it?</p>

<p style="text-align: right;">Page 206</p> <p>1 A No, that's a system health issue. Fine grain 2 load control, come -- I believe -- it looks to me like it 3 comes from PDU and relay mapping. So all the PDUs are 4 individually controllable, can be fully automated, and 5 then you have optional realtime breakeven monitoring. 6 You only have breakeven monitoring in realtime when you 7 have fine grain control of the load. If you have course 8 control -- if you have control of the load, you can do 9 breakeven monitoring, but it wouldn't happen in realtime. 10 Q So none of what you just said though is on this 11 bullet point, is it? 12 A None of what I just said -- 13 MR. RICORDATI: Objection. Mischaracterizes the 14 testimony. 15 MR. NELSON: Q None of the testimony you just gave 16 me regarding fine grain monitoring, none of that is in 17 your report, and none of it is written on page 91 18 anywhere, is it? 19 MR. RICORDATI: Objection. Mischaracterizes the 20 testimony. 21 THE WITNESS: The term fine grain load control 22 doesn't appear to be written on these pages, but the 23 interpretation of realtime breakeven monitoring would 24 give that -- would -- fine grain load control would be</p>	<p style="text-align: right;">Page 208</p> <p>1 Q We're not -- Mr. McNamara didn't have the code. 2 So I'm talking about what is communicated between 3 Mr. Storms and Mr. McNamara. 4 A Uh-huh. 5 Q And so what out of the documents in this email 6 would communicate in your opinion fine grain load 7 control? 8 A I think I already answered that. If you look 9 at that bullet, to implement break even monitoring in 10 realtime, you'd have to have control of the power 11 consumed by the load with a fast cycle time. Your duty 12 cycle for the load would have to be manageable at a very 13 refined rate. So that would be fine grain load control. 14 Fine grain load control is just a way to interpret that 15 statement. 16 Q Is there anything else in these documents, 90 17 through 97, that informs your opinion about whether fine 18 grain load control was communicated? 19 MR. RICORDATI: Objection. Asked and answered. 20 THE WITNESS: Well, another interpretation -- an 21 additional interpretation based on just the information 22 in the email -- and I honestly think that the 23 interpretation of that one bullet is enough, but the 24 interpretation of that one bullet along with the details</p>
<p style="text-align: right;">Page 207</p> <p>1 necessary to implement realtime breakeven monitoring. 2 MR. NELSON: Q And would a person receiving this 3 information -- would they recognize that just from 4 receiving this information? 5 A I don't know what somebody would recognize. 6 That's what it -- That's what it speaks to me. When I 7 read that, that's what I see. 8 Q And when you see that, is that based on your 9 knowledge of the source code and other things, or is it 10 just based on this document and the other email -- or the 11 other documents in this email? 12 A Well, I think if this document was the only 13 thing that you saw and you looked closely at realtime 14 breakeven monitoring you'd have to say to yourself well, 15 how do you do breakeven monitoring in realtime unless you 16 can control the load rapidly? All right. So, yeah, that 17 bullet right there would say I have rapid control 18 overload soak or the ability of the load to consume or 19 use power. So an interpretation of that could be fine 20 grain load control, and then when you look into the code 21 and you see that the thing really does have the ability 22 to map directly into each of those PDUs, it kind of 23 confirms the interpretation that that indicates fine 24 grain load control.</p>	<p style="text-align: right;">Page 209</p> <p>1 in the spreadsheet indicate that the breakeven mining 2 cost can change at five-minute intervals. So that would 3 be another form of break -- of fine grain load control. 4 Because if you can change the breakeven mining cost at 5 five-minute intervals you have the ability to change the 6 consumption of the load at least as fast as five minutes. 7 So that interpretation of the CSV file reinforces the 8 interpretation of the realtime breakeven monitoring. 9 Q And again looking -- looking at these 10 documents -- and when I say these documents, can we just 11 have an agreement that I'm talking about Exhibit -- is it 12 204? Exhibit 204, this email and the attachments. 13 A Yeah. 14 Q Okay. So looking at these documents, is there 15 any disclosure of how the -- how this system -- how this 16 drawing and associated spreadsheet did -- achieved the 17 fine grain load control that you're talking about? 18 MR. RICORDATI: Object to form. 19 THE WITNESS: I'm not exactly sure I'm following 20 what it is you're asking. If I consider these documents 21 alone, does it inform how to do fine grain load control? 22 MR. NELSON: Q Well, let me ask it. So I asked 23 you before what -- what in the documents you believed 24 indicated fine grain load control and you gave me an</p>

<p style="text-align: right;">Page 210</p> <p>1 answer.</p> <p>2 A Uh-huh.</p> <p>3 Q So now I'm asking if there's anything in the</p> <p>4 documents -- or I guess otherwise again in the context of</p> <p>5 the communications between Mr. Storms and Mr. McNamara</p> <p>6 indicated how to do the fine grain load control.</p> <p>7 A How to do the fine grain load control. Well,</p> <p>8 you have realtime breakeven monitoring which tells you</p> <p>9 that there's some form of load control that's happening</p> <p>10 fast, happening quickly, so you have a very flexible</p> <p>11 system. You have the ability to address -- because it</p> <p>12 talks about full automation of the PDU and relay mapping,</p> <p>13 you have the ability to address the power consumption of</p> <p>14 the devices individually, and then if you look in the</p> <p>15 spreadsheet, it confirms the fact that you have the</p> <p>16 ability to manipulate the power consumption of those</p> <p>17 devices at least on a five-minute interval.</p> <p>18 Q Okay. How does the spreadsheet indicate you</p> <p>19 have the ability to manipulate power consumption on a</p> <p>20 five-minute interval?</p> <p>21 A I think I already answered that with the</p> <p>22 breakeven mining cost. You can't calculate a breakeven</p> <p>23 mining cost when your power thresholds are changing</p> <p>24 unless you're able to manipulate load and the breakeven</p>	<p style="text-align: right;">Page 212</p> <p>1 realtime LMP revenue.</p> <p>2 Q So the next column to the -- one in from the</p> <p>3 far right is realtime -- real_time_LMP_revenue. Do you</p> <p>4 see that?</p> <p>5 A Uh-huh.</p> <p>6 Q How is that calculated?</p> <p>7 A That's the revenue that's calculated based on</p> <p>8 selling back the power using the realtime LMP strike</p> <p>9 price and the amount of power maximally consumed by the</p> <p>10 miners if they weren't being used.</p> <p>11 Q What is the realtime LMP strike price?</p> <p>12 A That's the third column from the right.</p> <p>13 Q So it's real_time_LMP?</p> <p>14 A Yeah, it's the data being received from the</p> <p>15 marketplace in realtime.</p> <p>16 Q The simulated data?</p> <p>17 A I believe this is actual data.</p> <p>18 Q He's not hooked up to the marketplace. He's</p> <p>19 pulling this from a website, right?</p> <p>20 A I believe his simulation in this -- yeah,</p> <p>21 that's right. It's being retrieved from somewhere else.</p> <p>22 I don't think it's actual realtime data from the ERCOT</p> <p>23 system. I think -- but it's being retrieved from</p> <p>24 somewhere else.</p>
<p style="text-align: right;">Page 211</p> <p>1 mining cost is changing on a five-minute interval. Of</p> <p>2 course this spreadsheet is -- doesn't give all the</p> <p>3 details, but it would indicate that.</p> <p>4 Q So the spreadsheet doesn't give any of the</p> <p>5 details, does it, it just gives columns and numbers,</p> <p>6 there's no calculations in the spreadsheet?</p> <p>7 A It sure does. You can infer them very easily.</p> <p>8 I see a host of things in this data. This data gives me</p> <p>9 an enormous amount of information. This is the output of</p> <p>10 a simulation. This is the unfiltered output of a</p> <p>11 complicated simulation that allows me to look directly</p> <p>12 back into how that simulation works.</p> <p>13 Q And so --</p> <p>14 A What it does.</p> <p>15 Q You're basically saying you can reverse</p> <p>16 engineer the calculations from looking at the simulation?</p> <p>17 A Absolutely.</p> <p>18 Q So going to the column on the far right, the</p> <p>19 realized revenue, what calculation is used to accomplish</p> <p>20 that?</p> <p>21 A It's a max of three of the other columns. If</p> <p>22 you look at three of the other columns, the value that's</p> <p>23 in realized revenue is the maximum value from mining</p> <p>24 revenue, day-ahead LMP revenue, and one other one. And</p>	<p style="text-align: right;">Page 213</p> <p>1 Q So network difficulty, that's a publicly</p> <p>2 available data, right?</p> <p>3 A Yep.</p> <p>4 Q What is mining revenue?</p> <p>5 A Mining revenue is the amount of money you would</p> <p>6 make by mining using those miners with that power</p> <p>7 threshold and that day-ahead price.</p> <p>8 Q The power threshold for the miners is the</p> <p>9 amount of power the miners would use if they're turned</p> <p>10 on, right?</p> <p>11 A Which is contained in this document here.</p> <p>12 Q What is the day_ahead_LMP_rev?</p> <p>13 A That's the revenue you make from -- that's</p> <p>14 the -- the day-ahead LMP is the day-ahead price, and</p> <p>15 day-ahead LMP revenue is the revenue you would make --</p> <p>16 that's day ahead -- from consuming that power without</p> <p>17 mining. That doesn't make sense. That would be the sell</p> <p>18 back. That's a revenue column. Okay. So I'm a little</p> <p>19 confused on that one, but that's the day-ahead LMP</p> <p>20 revenue. That's the revenue you would get from selling</p> <p>21 at the day-ahead LMP price a certain amount of power. I</p> <p>22 think it's the certain amount of power that you were</p> <p>23 consuming by your miners. That one is a little</p> <p>24 confusing. I believe this other one is -- Let me make a</p>

<p style="text-align: right;">Page 214</p> <p>1 quick calculation, double check.</p> <p>2 That's very close. So the breakeven mining --</p> <p>3 the daytime is obvious, that's when the data was</p> <p>4 retrieved. The block height, the bitcoin price, network</p> <p>5 hash rate, network difficulty, those are all bitcoin</p> <p>6 parameters that are retrieved from the bitcoin network.</p> <p>7 Breakeven mining cost is the amount of cost you incur by</p> <p>8 computing -- by doing bitcoin mining using your -- the</p> <p>9 power that you've -- outside the scope -- it's your</p> <p>10 downside, right, that's what you -- that's what -- you</p> <p>11 got to get past that to break even. So that's your --</p> <p>12 that's the amount of money that you have to be able to</p> <p>13 make to break even based on the cost of bitcoin mining</p> <p>14 and the cost of power.</p> <p>15 Q So the simulation that this spreadsheet</p> <p>16 represents, the day-ahead LMP revenue, is that money that</p> <p>17 would be generated by the bitcoin miner if it wasn't</p> <p>18 mining but is selling power, or is it -- or is it</p> <p>19 something else?</p> <p>20 A That one is confusing to me. I don't -- I'm</p> <p>21 struggling with what that one means. The one on</p> <p>22 right-hand side, the realtime LMP revenue is what you</p> <p>23 would make if you sold back at the realtime price.</p> <p>24 Q And is that the bitcoin miner selling back at</p>	<p style="text-align: right;">Page 216</p> <p>1 Q And what entity would be the one that would be</p> <p>2 doing it is my question.</p> <p>3 MR. RICORDATI: Objection. Vague.</p> <p>4 THE WITNESS: Doing what?</p> <p>5 MR. NELSON: Q That would be implementing the</p> <p>6 realized revenue. So if you install -- If somebody was</p> <p>7 -- In this simulation what perspective was Mr. Storms</p> <p>8 simulating? Was he simulating it from his system would</p> <p>9 be installed at a wind farm or his system would be</p> <p>10 installed at a bitcoin line?</p> <p>11 MR. RICORDATI: Object to form.</p> <p>12 THE WITNESS: That question doesn't make sense. The</p> <p>13 system is the bitcoin mine. So a system couldn't be</p> <p>14 installed at the bitcoin mine. It is the bitcoin mine.</p> <p>15 The assumption is that you have his system, you fill it</p> <p>16 up with bitcoin miners, you feed it power from somewhere</p> <p>17 that you're purchasing, according to some power</p> <p>18 agreement, and the power agreement has a minimum</p> <p>19 threshold that allows you to compute your breakeven point</p> <p>20 which you must get past with bitcoin mining to make any</p> <p>21 money.</p> <p>22 Then, if you get past that, and it's higher</p> <p>23 than what you could sell the power back at, then you mine</p> <p>24 bitcoin. If it's not, then you sell the power back.</p>
<p style="text-align: right;">Page 215</p> <p>1 the realtime price?</p> <p>2 A No, that's selling back the power without using</p> <p>3 it.</p> <p>4 Q I know. But what is the entity selling the</p> <p>5 power back?</p> <p>6 A The thing that's not doing the bitcoin mining.</p> <p>7 Q So the generator?</p> <p>8 A Yeah, that's selling the power that you've</p> <p>9 contracted to provide. That's passing the power through</p> <p>10 to the market rather than using it to mine bitcoin.</p> <p>11 That's the markup on the pass through. This data here</p> <p>12 is just -- this lays out the whole scheme. It's great.</p> <p>13 Q Trying to -- What is the entity though that's</p> <p>14 doing -- So the realized revenue is -- I think you told</p> <p>15 me this before, but what is the realized revenue column?</p> <p>16 A The realized revenue column is the maximum of</p> <p>17 three previous revenue columns.</p> <p>18 Q And those three revenue columns are which ones?</p> <p>19 A The ones that have rev in the name.</p> <p>20 Q And presumably then the strategy is to</p> <p>21 implement whichever is the highest realized revenue?</p> <p>22 Wherever the realized revenue column comes from is what</p> <p>23 you would do in a given timeframe?</p> <p>24 A Yep.</p>	<p style="text-align: right;">Page 217</p> <p>1 MR. NELSON: Q And you -- the entity that is the</p> <p>2 you there is the bitcoin mine selling the power back, not</p> <p>3 taking it, in other words?</p> <p>4 A It's this device, it's this system, the</p> <p>5 Bearbox -- It's the Bearbox system, it's the control --</p> <p>6 it's the control algorithm of the Bearbox system making</p> <p>7 those decisions based on inputs -- if you look at the</p> <p>8 diagram --</p> <p>9 Q You're on page 92 and 91?</p> <p>10 A 92. Yeah, it's -- You look at the diagram, you</p> <p>11 look at the spreadsheet, you go, oh, I get it. Doesn't</p> <p>12 matter where the power comes from, as long as it's three</p> <p>13 phase, four wire, 415, line to line, and that can be</p> <p>14 changed. All you have to do is swap out the PDU, and you</p> <p>15 can do it a different way. Swap out the PDU, get three</p> <p>16 phase, four wire, 208 then you plug it in in your house.</p> <p>17 It can work anywhere.</p> <p>18 Put a stepdown transformer in front of it, put</p> <p>19 a stepup transformer in front if, you want to jack it up.</p> <p>20 Q So let's go back and look at page 92 again. So</p> <p>21 you've got -- You see the bubbles on the right side?</p> <p>22 A Uh-huh.</p> <p>23 Q What do those bubbles represent?</p> <p>24 A That's the Python code.</p>

<p style="text-align: right;">Page 218</p> <p>1 Q Well, one of them. It say Python, right?</p> <p>2 A It's just an indicator -- They're all written</p> <p>3 in Python. I mean, one says post -- one says SQL</p> <p>4 database. That's a database. Right. It can be local or</p> <p>5 it can be somewhere else. One says -- one says API,</p> <p>6 right. So it's a bitcoin API. It's a Python -- it's</p> <p>7 implemented in Python to interface with bitcoin network.</p> <p>8 One says bitcoin core node, that's the one that's making</p> <p>9 the computations. One says custom PDU and fan control</p> <p>10 logic, that's implemented in Python. It's pulling</p> <p>11 information off the PDUs and sending information back to</p> <p>12 the PDUs as well as the fans.</p> <p>13 The other one says LAN cgminer watchdog with</p> <p>14 database table logging. That's the bitcoin miner</p> <p>15 activity. One says day-ahead LMP, blah, blah, blah,</p> <p>16 that's the interface implemented in Python that talks to</p> <p>17 the external entities to get power price.</p> <p>18 Q Anything else in the context of those seven</p> <p>19 bubbles?</p> <p>20 A Those seven bubbles are the Python code.</p> <p>21 They're the functions that are implemented by the Python</p> <p>22 code.</p> <p>23 Q So looking at these documents that we've been</p> <p>24 talking about, is there anything in here that discloses</p>	<p style="text-align: right;">Page 220</p> <p>1 that's coming from the system or from the, you know,</p> <p>2 either from a wind farm or generator or somewhere else,</p> <p>3 the amount of power this system is taking in?</p> <p>4 A No. It's the threshold that's coming in</p> <p>5 through the day-ahead price, or it's -- it's the</p> <p>6 threshold that you're using to calculate the breakeven</p> <p>7 mining cost.</p> <p>8 Q And how -- What is the calculation -- That</p> <p>9 threshold, what is the calculation that you're using to</p> <p>10 calculate the breakeven mining cost?</p> <p>11 A We'd have to look specifically at the code.</p> <p>12 Q So to figure that out you have to look at the</p> <p>13 source code?</p> <p>14 A Yeah. I mean, we can try to back into it from</p> <p>15 this, but it's -- that would be fraught with trial and</p> <p>16 error, but we can look into the source code and find --</p> <p>17 we can see in the course code where it writes this table</p> <p>18 out.</p> <p>19 MR. RICORDATI: We've been going over an hour.</p> <p>20 MR. NELSON: Yeah. Let me -- Five more minutes on</p> <p>21 the drawing here.</p> <p>22 MR. RICORDATI: Sounds good.</p> <p>23 MR. NELSON: Q These documents we've been talking</p> <p>24 about, do they disclose the performance strategy</p>
<p style="text-align: right;">Page 219</p> <p>1 minimum power thresholds?</p> <p>2 A Well, the breakeven gives you the minimum power</p> <p>3 thresholds. It's implicitly using minimum power</p> <p>4 thresholds. It talks day-ahead LMP pricing, so it's</p> <p>5 trying to compute the breakeven point for the bitcoin, so</p> <p>6 that's a minimum power threshold. That's the minimum</p> <p>7 amount of power that I have to use, right, to calculate</p> <p>8 my breakeven.</p> <p>9 Q I guess help me understand why you believe that</p> <p>10 a minimum power threshold here is implicit in the</p> <p>11 breakeven calculation.</p> <p>12 A Because that's what the breakeven would mean.</p> <p>13 Q So in the context of that assumption, what do</p> <p>14 you understand the minimum power threshold to be?</p> <p>15 A It's whatever power is driving the calculation</p> <p>16 of the breakeven mining cost based on what the bitcoin</p> <p>17 mining cost bitcoin difficulty is.</p> <p>18 Q So where is that power coming from?</p> <p>19 A The lightning bolt.</p> <p>20 Q So --</p> <p>21 A It's coming from the three-phase, four-wire --</p> <p>22 Q It's coming -- yeah -- So in your view the</p> <p>23 minimum power threshold that you're discussing here in</p> <p>24 connection with these documents is the amount of power</p>	<p style="text-align: right;">Page 221</p> <p>1 comprising a power consumption target?</p> <p>2 A These use a power consumption target that's</p> <p>3 uniformly above the threshold, and it's trying to find</p> <p>4 the maximum so it's using the power consumption target</p> <p>5 which is the full out, right. It's a corner case, it's</p> <p>6 full out. Turn them all on and let them run.</p> <p>7 Q Do these documents disclose that responsive to</p> <p>8 receiving the power option data you determine the</p> <p>9 performance strategy for the set of competing systems</p> <p>10 based on the combination of the power option data,</p> <p>11 meaning the time and the power threshold -- minimum power</p> <p>12 threshold, at least one condition in the set of</p> <p>13 conditions?</p> <p>14 A You can see that the computations change every</p> <p>15 five minutes, so they're sensitive to the data that's</p> <p>16 coming in, you can see that the bitcoin mining cost</p> <p>17 changes every five minutes. So you can see that it's</p> <p>18 recomputing -- it's re-centering itself based on what its</p> <p>19 costs are going to be, and you can see the revenue that's</p> <p>20 realized after that, and it's making a decision as to</p> <p>21 which revenue path to take. Yes -- the spreadsheet</p> <p>22 illustrates all of that.</p> <p>23 Q And so where is it illustrating determining a</p> <p>24 power consumption target?</p>

<p style="text-align: right;">Page 222</p> <p>1 A Based on the breakeven mining cost.</p> <p>2 Q How is that indicating that it's actually --</p> <p>3 that it's actually creating a power consumption target</p> <p>4 for the set of computers?</p> <p>5 A Because if I don't break even, I shouldn't</p> <p>6 mine. If I break even -- if I do more than break even</p> <p>7 with mining, that's a target.</p> <p>8 Q So that's your -- your power consumption target</p> <p>9 is whatever the target is that will let you break even or</p> <p>10 greater?</p> <p>11 MR. RICORDATI: Objection. Mischaracterizes the</p> <p>12 testimony.</p> <p>13 THE WITNESS: Your power consumption -- your minimum</p> <p>14 threshold for power consumption coincides with your</p> <p>15 minimum threshold for bitcoin mining, because if you're</p> <p>16 mining bitcoin and you're below that, you're just wasting</p> <p>17 time. So I compute my bitcoin mining threshold to</p> <p>18 coincide with that threshold, and anything above that,</p> <p>19 I'm in fat city when I'm mining bitcoin, unless if I sell</p> <p>20 back, it's higher than that.</p> <p>21 MR. NELSON: Q And so in that context, what's your</p> <p>22 minimum power threshold?</p> <p>23 A We'd have to back it out of the breakeven</p> <p>24 mining cost.</p>	<p style="text-align: right;">Page 224</p> <p>1 basically they converted that -- that same information,</p> <p>2 whether it's characterized as trade secret claim or</p> <p>3 conversion claim, that Lancium took something from</p> <p>4 Bearbox, is that fair?</p> <p>5 A Yes.</p> <p>6 Q And so looking at paragraphs 91 and 92 -- I</p> <p>7 think I asked you before what you thought was taken. But</p> <p>8 does 91 -- do 91 and 92 either separately or together</p> <p>9 disclose in your opinion what it is that Lancium</p> <p>10 allegedly took from Bearbox?</p> <p>11 A 91 and 92? Paragraph 91 and 92?</p> <p>12 Q No, no. Bearbox documents 91 and --</p> <p>13 A Oh, oh, oh. Sorry. I misunderstood.</p> <p>14 Certainly the concept -- much of the overall concept is</p> <p>15 described in 91 and 92, but I think -- I think you have</p> <p>16 to take the entirety of what was emailed, 91 and 92 plus</p> <p>17 the CSV file.</p> <p>18 Q I want to focus on 91 and 92 first. This is --</p> <p>19 this is really resp -- regarding what was -- what you --</p> <p>20 what you allege in your reports was taken that is outside</p> <p>21 of the patent. Does that make sense?</p> <p>22 A Yeah.</p> <p>23 Q So you said that 91 and 92 disclose the</p> <p>24 concept. What concept do you believe they disclosed that</p>
<p style="text-align: right;">Page 223</p> <p>1 Q So you'd have to look at the code basically?</p> <p>2 A I mean, the power threshold is associated with</p> <p>3 the breakeven mining cost. You can probably compute it</p> <p>4 right here. It may take into account some -- it may take</p> <p>5 into account some dead cost, so I don't know if you'd be</p> <p>6 able to compute it exactly from here. You might have to</p> <p>7 take into account some of the dead cost from the systems.</p> <p>8 The code would be explicit on that and would tell us</p> <p>9 exactly how to compute it.</p> <p>10 MR. NELSON: Why don't we take a break.</p> <p>11 THE VIDEOGRAPHER: The time is 3:37 p.m. This is</p> <p>12 the end of media unit 2 and we're going off the video</p> <p>13 record.</p> <p>14 (Off the record)</p> <p>15 THE VIDEOGRAPHER: The time is 4:00 p.m. This is</p> <p>16 the beginning of media unit 4, and we're back on the</p> <p>17 video record.</p> <p>18 MR. NELSON: Q So, Mr. McClellan, let me get you</p> <p>19 to focus on pages 91 and 92 of Exhibit 204 for a minute.</p> <p>20 A Okay.</p> <p>21 Q Now, if I understand correctly, you have an</p> <p>22 opinion in your report that Lancium misappropriated</p> <p>23 certain amount of trade secret -- certain trade secrets</p> <p>24 from Bearbox and in your reply report that those -- that</p>	<p style="text-align: right;">Page 225</p> <p>1 was allegedly taken?</p> <p>2 A I think the -- the thing that's disclosed here</p> <p>3 is -- well, the day-ahead pricing and the realtime</p> <p>4 pricing is something that's known. That's ERCOT stuff,</p> <p>5 right. The thing that's really disclosed is this</p> <p>6 collection of bullets down here where you have full</p> <p>7 automation, optional realtime breakeven monitoring,</p> <p>8 renewable marketplace data. The concept of breakeven</p> <p>9 monitoring I think and the sell back price based on the</p> <p>10 breakeven monitoring I think is a critical piece.</p> <p>11 Q All right. And so when you were -- when you</p> <p>12 were talking just now, you were talking about the bullet</p> <p>13 points under software management on page 91, and then</p> <p>14 specifically the last two open bullet point -- the fourth</p> <p>15 from the bottom open bullet point on software management?</p> <p>16 A Yeah, the next to the last bullets -- under</p> <p>17 software management bullets 3 and 4 I think are critical.</p> <p>18 Q You think that is -- how does that disclose the</p> <p>19 alleged concept that you believe Lancium converted from</p> <p>20 Mr. Storms?</p> <p>21 A Well, I don't think that that discloses the</p> <p>22 entire concept. I think that gives you a peek at the</p> <p>23 concept because it talk about breakeven monitoring using</p> <p>24 marketplace data, and it's a bitcoin miner. So that gets</p>

<p style="text-align: right;">Page 226</p> <p>1 you half -- that gets you part of the way there, and then</p> <p>2 you start using that in context with the CSV file and it</p> <p>3 starts to become quite clear.</p> <p>4 Q I want to focus only right now on 91 --</p> <p>5 pages 91 and 92. Okay. So you identified the bullet</p> <p>6 points we just talked about as disclosing at least part</p> <p>7 of the concept that you allege Lancium converted from</p> <p>8 Bearbox, right?</p> <p>9 A Yeah. I think you have to take them</p> <p>10 altogether. I don't think individual -- like one page of</p> <p>11 91 and 92 gives you some of it, the other page gives you</p> <p>12 some of it, but it doesn't -- all of them together give</p> <p>13 you more than -- the whole is greater than the sum of the</p> <p>14 parts in this case.</p> <p>15 Q And I'm asking you right now to focus on 91 and</p> <p>16 92.</p> <p>17 A Uh-huh.</p> <p>18 Q And what of the parts -- of the thing that you</p> <p>19 allege Lancium took from Bearbox, what of the parts are</p> <p>20 disclosed in 91 and 92, without reference to 97, without</p> <p>21 reference to the spreadsheet.</p> <p>22 MR. RICORDATI: Objection. Asked and answered.</p> <p>23 THE WITNESS: I think the bullets on 91 that talk</p> <p>24 about full automation and breakeven monitoring using</p>	<p style="text-align: right;">Page 228</p> <p>1 if the document, the spreadsheet, Bearbox 97 had never</p> <p>2 been communicated to Mr. Storms, your opinion would be</p> <p>3 that Lancium had not converted valuable information from</p> <p>4 Mr. Storms?</p> <p>5 A I wouldn't put it that way.</p> <p>6 Q I'm asking you again, assume the spreadsheet</p> <p>7 was not disclosed, and, yes, it's a hypothetical, would</p> <p>8 you still be of the opinion that Lancium converted</p> <p>9 valuable information in the form of breakeven arbitrage</p> <p>10 from Mr. Storms?</p> <p>11 MR. RICORDATI: Object to the form.</p> <p>12 THE WITNESS: Yeah, on page 91 it uses the term</p> <p>13 breakeven so, yes.</p> <p>14 MR. NELSON: Q So you would still be of the opinion</p> <p>15 that Lancium's -- Lancium converted Mr. Storms' allegedly</p> <p>16 proprietary breakeven arbitrage method?</p> <p>17 A Well, it uses the term breakeven on page 91.</p> <p>18 So if all he communicated was pages 91 and 92, they still</p> <p>19 would have been apprised of the breakeven monitoring</p> <p>20 capability.</p> <p>21 Q And you think that's enough -- that would be</p> <p>22 enough to support your opinion that Mr. Storms' valuable</p> <p>23 information was converted by Lancium?</p> <p>24 A My opinion is based on the data that was</p>
<p style="text-align: right;">Page 227</p> <p>1 renewable marketplace data gives you the idea that</p> <p>2 there's a sell back piece here that you might not have</p> <p>3 thought about before, and you can automate that, and then</p> <p>4 -- and then the diagram talks about realtime pricing from</p> <p>5 the local market price every five minutes, and it talks</p> <p>6 about reoptimizing every five minutes using the custom</p> <p>7 logic and stuff, and it shows simultaneously the dollars</p> <p>8 and the bitcoin. Right.</p> <p>9 MR. NELSON: Q Uh-huh. So I want you to assume for</p> <p>10 the purposes of this next question that the Bearbox 97,</p> <p>11 the spreadsheet, was never communicated to Lancium,</p> <p>12 doesn't exist for the purpose of this question. Would</p> <p>13 you still have the opinion that Lancium converted an</p> <p>14 arbitrage method for Mr. Storms?</p> <p>15 MR. RICORDATI: Object to the form.</p> <p>16 THE WITNESS: Well, that's a completely -- that's a</p> <p>17 complete hypothetical that takes out one of an important</p> <p>18 set of items that we were communicated.</p> <p>19 MR. NELSON: Q Can you answer my question?</p> <p>20 A I'm saying it's a complete hypothetical. So</p> <p>21 under those hypothetical situations, I think that it</p> <p>22 gives a hint of what that concept is, but it doesn't give</p> <p>23 the entire flavor of it.</p> <p>24 Q So the answer to my question would be no, if --</p>	<p style="text-align: right;">Page 229</p> <p>1 actually communicated, not the hypothetical.</p> <p>2 Q And my question assumes the hypothetical. So</p> <p>3 assume that this Bearbox 97 was not disclosed. Is your</p> <p>4 opinion still that Lancium converted breakeven arbitrage</p> <p>5 method from Mr. Storms?</p> <p>6 A Under the hypothetical if the spreadsheet</p> <p>7 data -- the simulation data was not disclosed, we need to</p> <p>8 define what was disclosed, did I -- would he have</p> <p>9 disclosed in the hypothetical that he had a full</p> <p>10 simulation, would he have disclosed in the hypothetical</p> <p>11 what the simulation contained. Once we go down into the</p> <p>12 hypothetical we have to define some more things.</p> <p>13 Q My --</p> <p>14 A All he -- all he disclosed was this document,</p> <p>15 then it gave them the breakeven concept right there.</p> <p>16 Q And so in your view based on this document,</p> <p>17 meaning pages 91 and 92, if that's all he disclosed,</p> <p>18 would you still be of the opinion that Lancium converted</p> <p>19 valuable -- a valuable breakeven arbitrage method from</p> <p>20 Mr. Storms?</p> <p>21 A Well, this is a hypothetical situation, right?</p> <p>22 So hypothetically they could have seen this and asked him</p> <p>23 some more questions.</p> <p>24 Q That's not my question. My question is, if</p>

<p style="text-align: right;">Page 230</p> <p>1 this -- pages 91 and 92 were all that were disclosed, is 2 it your opinion that Lancium still converted a valuable 3 -- Mr. Storms' valuable -- allegedly valuable breakeven 4 arbitrage method? 5 A Well, if it's a hypothetical, then we have to 6 define some things better. 7 Q I just did. This is what you have. 8 A Okay. So they weren't able to interact with 9 him anymore, they weren't able to ask anymore more 10 questions, they weren't able to get anymore data, this is 11 where it stopped. 12 Q The email sent only these two pieces of paper. 13 A Well, this indicates breakeven monitoring -- 14 realtime breakeven monitoring using renewable marketplace 15 data. And it indicates full automation using individual 16 PDU mapping, it indicates a compatibility with a bunch of 17 different kind of bitcoin mining devices, it indicates a 18 control system that can exchange bitcoin data that can 19 log that data -- the computed data, the simulated data, 20 it contains custom PDU and flow control hardware and 21 logic where you have better control over the devices, and 22 it contains logic that deals with day-ahead pricing as 23 well as realtime pricing to compute the realtime 24 breakeven monitoring, and it shows simultaneously dollars</p>	<p style="text-align: right;">Page 232</p> <p>1 up infringing the patent regardless. 2 Q Okay. So let's take the patent out of it. So 3 assume that you could implement this system without 4 infringing the patent. Has Lancium done anything that 5 would prevent Mr. Storms from doing it? 6 A I don't know. I can't speak to that. 7 Q You're not -- are you aware of anything? 8 A I'm not aware of anything that they've done to 9 prevent him. 10 Q Looking back at the spreadsheet here, 11 Exhibit -- Bearbox 97. So the break even calculation -- 12 We just take the first line here dated 5-6-19 at 11:37. 13 Do you see that, 11:37 -- don't know if it's a.m. or 14 p.m., but -- 15 A Well, it's military time so it's a.m. 16 Q Okay. You're right. It is. So the breakeven 17 calculation that's being done is being done for that 18 point in time, right? 19 A It's being done for that five-minute period, I 20 believe. 21 Q Well, it's not done every minute. It's done -- 22 it's done at this specific time, and then it's done again 23 five minutes later? 24 A Every five minutes for -- yeah, it's a sample</p>
<p style="text-align: right;">Page 231</p> <p>1 and bitcoin. I think it gives the concept -- it gives 2 the overall concept. I think the CSV file gives details 3 that get very directly to the conversion. 4 Q So the answer to my question was yes, based 5 only on paragraphs -- on documents 91 and 92, your 6 opinion would not change, you still would believe that 7 Lancium converted Mr. -- Mr. Storms' breakeven arbitrage 8 method -- system? 9 A My opinion would not change. 10 Q So coming back out of the hypothetical now. 11 Has Lancium done anything to your knowledge 12 that would prevent Mr. Storms from utilizing his 13 breakeven arbitrage method? 14 A Well, they filed the patent. That prevents a 15 barrier to entry in the market. 16 Q The patent doesn't cover the breakeven 17 arbitrage method, or do you believe it does? 18 A If he were to use his system, it might be 19 infringing the patent anyway. Even if he used his 20 system -- because the arbitrage adds onto the 21 capabilities disclosed in the patent. It adds some 22 things onto that aren't specifically disclosed in the 23 patent, but they're hinted at. So I think even if you 24 implemented a system like this, you end up -- you may end</p>	<p style="text-align: right;">Page 233</p> <p>1 and hold for that five-minute period. 2 Q Yeah. So for -- I don't know how long it takes 3 to do the calculation, but it's done, and then there's an 4 assumption made that it's -- that's going to hold for the 5 next five minutes, right? 6 A I believe the realtime market pricing only 7 comes in five-minute intervals, so -- 8 Q And the realtime market pricing that's being 9 used here is also the realtime for this five minute -- 10 five -- for this particular time, right? 11 A Yeah. I believe that's the data that's driving 12 this cycle. Right. That's the data that's giving you 13 the minimum cycle time on the process, because the 14 realtime market price, it changes every five minutes. 15 Q And I believe you testified earlier that you 16 had a couple of different options here on this system. 17 You could sell power back at the realtime price, you 18 could sell power back at the day-ahead price, or you 19 could mine and you would choose which is the most 20 profitable of those three options to do? 21 A That's my interpretation of what this data is 22 doing. 23 Q So how -- With those options how could -- how 24 could you sell power at the day-ahead price in this</p>

<p style="text-align: right;">Page 234</p> <p>1 context?</p> <p>2 A Well --</p> <p>3 Q You're a bitcoin miner --</p> <p>4 A I mentioned earlier that I was a little bit</p> <p>5 fuzzy about what the day-ahead LMP revenue column</p> <p>6 actually means. I mean, the other ones jump right out.</p> <p>7 The day-ahead LMP revenue seems to be calculated dollars.</p> <p>8 It's revenue, so it's dollars based on the day-ahead LMP</p> <p>9 column because it's day-ahead LMP. I'm not exactly sure</p> <p>10 how the revenue number is derived from the day-ahead LMP.</p> <p>11 It would take a little bit of reading between the lines</p> <p>12 to figure that out. It's probably -- it's probably based</p> <p>13 on some of the characteristics that are contained on 91.</p> <p>14 Q So looking back at all of this -- the materials</p> <p>15 here in Exhibit 204, do they teach a person of ordinary</p> <p>16 skill that the bitcoin mine -- that the bitcoin mine must</p> <p>17 utilize a specific amount of power? By utilize I mean</p> <p>18 actually use to mine -- to mine bitcoins.</p> <p>19 A Well, they say that if you use that power to</p> <p>20 mine bitcoin on that date using those mining numbers, you</p> <p>21 would make that much money.</p> <p>22 Q But is there a requirement that the bitcoin</p> <p>23 mine here that's being depicted and that's being</p> <p>24 simulated must use a certain amount of power regardless</p>	<p style="text-align: right;">Page 236</p> <p>1 least that much, regardless of whether they're losing</p> <p>2 money doing it or not.</p> <p>3 A Well, that's the break -- that comes from the</p> <p>4 breakeven mining cost.</p> <p>5 Q But that's -- the breakeven mining cost is</p> <p>6 telling you whether it makes sense to mine or not mine?</p> <p>7 A That's where the power threshold comes from.</p> <p>8 Q Right.</p> <p>9 A That's the minimum power threshold.</p> <p>10 Q But it -- but is there a requirement that</p> <p>11 regardless of what that breakeven cost is, it could be</p> <p>12 negative, that the system still must use X amount of</p> <p>13 power, even if they're losing money mining bitcoin doing</p> <p>14 it?</p> <p>15 A Why would you mine bitcoin to lose money?</p> <p>16 Q I'm asking --</p> <p>17 A That doesn't make any sense. This doesn't</p> <p>18 teach that.</p> <p>19 Q This does not?</p> <p>20 A Because if you're trying to mine bitcoin to</p> <p>21 lose money, why do it this hard way? I can think of</p> <p>22 easier ways to lose money.</p> <p>23 Q Does the system teach a performance strategy</p> <p>24 based on that the system must use X amount of power,</p>
<p style="text-align: right;">Page 235</p> <p>1 of what -- whether it's profitable to do so or not?</p> <p>2 A Well, this system is -- like we discussed</p> <p>3 previously, this system is set up -- and I believe he's</p> <p>4 running this full open. So this is with a fully</p> <p>5 populated system running full open, and if you did that,</p> <p>6 based on these power prices and those bitcoin prices,</p> <p>7 that's how much money you would make. So if you wanted</p> <p>8 to make less money than that, you could run less miners.</p> <p>9 Q That's not my question. My question is,</p> <p>10 regardless of profitability, does this system teach that</p> <p>11 the miners must consume a minimum amount of power, some</p> <p>12 amount that's more than zero, regardless of whether it's</p> <p>13 profitable to do so?</p> <p>14 MR. RICORDATI: Object to form.</p> <p>15 THE WITNESS: It appears to teach that if you use</p> <p>16 the power that you've pre-purchased you must make at</p> <p>17 least that much money that's talked about in the</p> <p>18 breakeven mining cost.</p> <p>19 MR. NELSON: Q That's not my question. My</p> <p>20 question is, under the system that's discussed --</p> <p>21 described in Exhibit 204, is there any teaching that the</p> <p>22 -- the bitcoin mine must use a certain amount of power</p> <p>23 for a certain time period? Let's say 50 megawatts as an</p> <p>24 example. Can you use more? But that it must use at</p>	<p style="text-align: right;">Page 237</p> <p>1 again, regardless of whether it's profitable to do so or</p> <p>2 not?</p> <p>3 A Must -- Well, that again goes back to the</p> <p>4 breakeven mining cost, you must use that much power to</p> <p>5 break even for mining.</p> <p>6 Q Right. But that's -- again, that's calculating</p> <p>7 whether you're going to make money or not. I'm saying</p> <p>8 regardless of profitability, does the system teach a</p> <p>9 performance strategy that is based on using at least X</p> <p>10 amount of power, that must be -- that must be utilized by</p> <p>11 the miners, even it's -- even if they're losing money</p> <p>12 doing it?</p> <p>13 A The assumption in the simulation here is that</p> <p>14 when the miners are operating, they're consuming the</p> <p>15 amount of power that's contracted.</p> <p>16 Q But we've talked about -- I don't want to use</p> <p>17 the word consuming because consuming --</p> <p>18 A They're using --</p> <p>19 Q They're using as in mining or --</p> <p>20 A Yeah. Those systems are using -- well, this is</p> <p>21 a side-by-side simulation. That's one of the nice things</p> <p>22 about simulation. Right. It's as if you did both things</p> <p>23 at the same time, right? So if you were to go down this</p> <p>24 path and use that power to do mining, you would get this</p>

<p style="text-align: right;">Page 238</p> <p>1 much money. If you were to stop mining at certain times, 2 you would get this much money. So which one do I use? 3 That's a performance strategy. At this time I turn on 4 the miners, at that time I turn off the miners, and there 5 may be areas in between where I modulate how much mining 6 I do. 7 Q Okay. That's not my question. My question is, 8 does this system contemplate a performance strategy where 9 X amount of power must be utilized by the miners, they 10 must mine and use X amount of power, regardless of 11 whether or not it's profitable for the miners to do so? 12 MR. RICORDATI: Object to form. 13 THE WITNESS: That's the breakeven mining cost. 14 That's associated with the breakeven mining cost. The 15 simulation kind of ignores that -- I'm going to say just 16 for a second nonsensical case, right, because why am I 17 mining bitcoin to lose money. So let's call that -- 18 MR. NELSON: Q Well, I'm -- that's my -- 19 A That's the wrong terminology for it. This 20 simulation ignores that case, because it's focusing on 21 ways to make positive dollars by choosing a performance 22 strategy that enhances the choice of mining versus sell 23 back. 24 Q No. And I understand that, but my question is</p>	<p style="text-align: right;">Page 240</p> <p>1 Q Do you know what base point information is? 2 A I think -- In terms of a power system? 3 Q In terms of your opinions. 4 A In what context? In terms of opinions with 5 this case? 6 Q Yes. 7 A I don't think -- I don't know if that terms has 8 showed up. It may, but I don't recognize it right 9 offhand. 10 Q So go to paragraph 285 of your report. 11 A 285? 12 Q Yes. 13 A Yes. 14 Q So what's a base point? 15 A It says that the base point is the minimum 16 required power usage value which corresponds to the 17 claimed minimum power thresholds. 18 Q And how does that correspond to the claimed 19 minimum power threshold? 20 A That's the amount of power that you need to use 21 or need to pay for depending on how the contract is 22 structured. 23 Q So that's what the base point is or that's what 24 the minimum power threshold is?</p>
<p style="text-align: right;">Page 239</p> <p>1 focused on what you call the nonsensical strategy, which 2 I think probably answers my question. So the system 3 doesn't contemplate a performance strategy where the 4 system must run, must consume X amount of power, 5 regardless of whether they're going to make money 6 consuming that X amount of power or not consuming it? 7 MR. RICORDATI: Objection to form. 8 THE WITNESS: I believe that's -- I'm sorry. As 9 I've said, I believe that's built into the breakeven 10 mining cost. 11 MR. NELSON: Q How? 12 A That's -- I believe that that's the amount of 13 -- if you use the minimum amount of power, that's the 14 cost per power unit that you'd have to achieve. Anything 15 below that, you're losing money. Anything above that, 16 you're making money. That's why it's break even. 17 Q Let's say that you have -- I'll leave it at 18 that. 19 So in calculating the breakeven price and the 20 respective realized revenues, do you know if that's done 21 on the power prices being zonal power prices or nodal 22 power prices? 23 A I don't know. It's a day-ahead LMP. It 24 doesn't qualify the day-ahead LMP more than that.</p>	<p style="text-align: right;">Page 241</p> <p>1 MR. RICORDATI: Objection. Mischaracterizes the 2 testimony. 3 THE WITNESS: It corresponds to the minimum power 4 threshold. So that's the base utilization value. 5 MR. NELSON: Q That's what I'm trying to figure out 6 what you mean. You say it corresponds to it. What does 7 that mean? 8 A Well, I think the power thresholds are power -- 9 this goes back to the discussion earlier about using 10 power versus paying for power. You have to pay for the 11 power. If you do one of these option agreements, you 12 have to pay for the power whether you use it or not. 13 It's not clear to me whether you're required to use it. 14 It's clear to me that you have to have the capability of 15 using it, otherwise, you couldn't stroke the contract, 16 but it's not clear to me -- because this is a question 17 for Mr. McCamant, it's not clear to me if you have to 18 consume that power because if you didn't consume that 19 power, that just leaves a little bit of surplus, but 20 that's okay, because they got paid for it. 21 So it makes me think that the minimum power 22 thresholds are something you commit to pay for and 23 something that you can use, but not something that you 24 must use.</p>

<p style="text-align: right;">Page 242</p> <p>1 Q My question was relating to base points though.</p> <p>2 Does the base point come from the independent system</p> <p>3 operator?</p> <p>4 A It says it comes from the QSE.</p> <p>5 Q And does it ultimately come from the</p> <p>6 independent system operator? Do you know or not know?</p> <p>7 A Well, the QSE is a function of -- is a</p> <p>8 marketplace. It's associated with the ISO. So I see</p> <p>9 them as kind of the same thing. Again, this is a -- this</p> <p>10 is an ERCOT question. I don't know the specifics of</p> <p>11 this.</p> <p>12 Q Okay. Do you know how the base point is</p> <p>13 determined?</p> <p>14 A Power systems have a base load that they expect</p> <p>15 to be able to fill, and they have to purchase that</p> <p>16 power -- at least that much power to service that base</p> <p>17 load, and if they go -- if they have power requirements</p> <p>18 that go beyond the base load, then they have to go to</p> <p>19 reserves. I think that the base point is your element of</p> <p>20 that base load. Right. If you bid into the marketplace</p> <p>21 at minimum power thresholds, that's the base -- that's</p> <p>22 the element of the base load that you've committed to</p> <p>23 take if you have to.</p> <p>24 Q Do you know how it's determined whether a</p>	<p style="text-align: right;">Page 244</p> <p>1 MR. RICORDATI: Objection. Asked and answered.</p> <p>2 THE WITNESS: I -- I -- I don't know the specifics.</p> <p>3 I know that there's a minimum power threshold as we've</p> <p>4 discussed.</p> <p>5 MR. NELSON: Q So go to paragraph 298.</p> <p>6 A Yeah.</p> <p>7 Q And the second -- the second sentence reads:</p> <p>8 The .CSV file also described and/or explained how to</p> <p>9 determine a generated mining revenue figure to be expect</p> <p>10 from using power to mine bitcoin, a realtime LMP revenue</p> <p>11 figure based on selling energy to the grid at the current</p> <p>12 realtime energy price, a day-ahead LMP revenue figure</p> <p>13 based on selling energy to the grid in the future at the</p> <p>14 day-ahead energy price, and a realized revenue figure</p> <p>15 that represented the most profitable of the other three</p> <p>16 revenue figures.</p> <p>17 Do you see that?</p> <p>18 A Yes.</p> <p>19 Q So aren't options two or three mutually</p> <p>20 exclusive of each other, that you either sell -- you'd</p> <p>21 either sell realtime revenue based on selling energy to</p> <p>22 the grid at the current realtime energy price -- Strike</p> <p>23 that.</p> <p>24 I'm going to ask you the same question I asked</p>
<p style="text-align: right;">Page 243</p> <p>1 company would receive base point information from a QSE?</p> <p>2 A I don't know. I assume that's a -- once you --</p> <p>3 once you -- once you stroke that contract to be able to</p> <p>4 do power options, then you're qualified to soak that load</p> <p>5 and you can get the information.</p> <p>6 Q You say assume. Do you know or not?</p> <p>7 A I think that's how it works, but I'm not an</p> <p>8 expert in this. We have to talk to Mr. McCamant about</p> <p>9 that.</p> <p>10 Q Do you know if Mr. Storms' simulation</p> <p>11 contemplating -- contemplated receiving base point</p> <p>12 information?</p> <p>13 A I don't know. It talks about day-ahead pricing</p> <p>14 and realtime pricing. I mean, it talks about if base</p> <p>15 point is a minimum required power usage, then that</p> <p>16 corresponds to a minimum power thresholds, then we've</p> <p>17 already discussed the fact that you can back into the</p> <p>18 minimum power thresholds from his data.</p> <p>19 Q So my question was, do you know if Mr. Storms'</p> <p>20 system received or was -- simulation was capable --</p> <p>21 Strike that.</p> <p>22 Do you know if Mr. Storms' system contemplated</p> <p>23 receiving base point information, yes or no? Do you</p> <p>24 know?</p>	<p style="text-align: right;">Page 245</p> <p>1 you before. I'm not sure if it's going to be any</p> <p>2 different. I'm still trying to figure out what option</p> <p>3 the third option means there, a day-ahead LMP revenue</p> <p>4 figure based on selling energy to the grid in the future</p> <p>5 at the day-ahead energy price. Why would you do that?</p> <p>6 A That's the column in the table that I think is</p> <p>7 confusing. I think that column is kind of -- kind of</p> <p>8 sets a lower bound that really is kind of not very</p> <p>9 useful. I think the day-ahead -- the day-ahead column in</p> <p>10 the table -- Okay. So I bought -- I bought the power</p> <p>11 day-ahead at this price per kilowatt or per megawatt or</p> <p>12 whatever. What if I just turned around and sold it at</p> <p>13 exactly that price and ignored the realtime price? Oh,</p> <p>14 that would be -- that would be if I wanted to make zero</p> <p>15 money.</p> <p>16 Q Well, sitting here today, can you explain to me</p> <p>17 how the third option here, which is the day-ahead LMP rev</p> <p>18 column, how that -- how that's calculated or even what it</p> <p>19 means?</p> <p>20 A That's using the day-ahead energy price and</p> <p>21 multiplying that by the amount of energy -- day-ahead</p> <p>22 energy price -- Let me look at the table. That's why</p> <p>23 that table -- that element of the table is confusing to</p> <p>24 me. I don't -- I think that's -- I think the day-ahead</p>

<p style="text-align: right;">Page 246</p> <p>1 LMP is the per unit price and the day-ahead LMP revenue 2 price is the per unit price multiplied by the number of 3 units I committed to. 4 All right. So day-ahead LMP is dollars per 5 kilowatt, and day-ahead LMP rev is dollars per kilowatt 6 multiplied by kilowatt to get my dollars back. So it's 7 kind of a -- That column just doesn't make any sense to 8 me. 9 For example -- To clear this up a little bit, 10 if this -- if this scenario that this simulation was run 11 against had committed to purchase one unit at the 12 day-ahead price, then day-ahead LMP and day-ahead LMP rev 13 would be the same number, because it would be dollars per 14 kilowatt multiplied by one kilowatt, or dollars per 15 megawatt multiplied by one megawatt. So those two 16 columns would be the same number. So it's just -- it's 17 just -- it's a volume scaling based on the things that 18 I've committed to buy. 19 Q Let me hand you what we'll mark as Exhibit 205. 20 (Exhibit 205 marked as requested) 21 Q Can you look at Exhibit 205, tell me what it 22 is? 23 A Looks like reply report based on a rebuttal of 24 the original report.</p>	<p style="text-align: right;">Page 248</p> <p>1 cases there's -- I think it's called a Markman hearing 2 where they do claim construction and different elements 3 of the claim are laid out. I don't believe that happened 4 in this particular case. 5 Q Yet. 6 A Yet. Okay. I haven't seen anything to that 7 effect. 8 Q Right. My question is just what is your basis 9 for believing that Lancium took the position that claim 10 construction was not necessary. 11 A That's what I was told. 12 Q Okay. That's all I wanted to know. So in 13 applying your analysis -- so paragraph 10 talks a little 14 bit more about legal standards. And my question is in 15 applying your analysis, did you understand that 16 corroborating conception alone is enough for something -- 17 for someone to be considered a joint inventor? 18 MR. RICORDATI: Object to form. 19 THE WITNESS: Say it again. 20 MR. NELSON: Q So in performing your analysis, did 21 you understand that corroborating conception by itself is 22 enough for one -- a purported person to be considered -- 23 Let me start over again. 24 In forming your opinions did you understand</p>
<p style="text-align: right;">Page 247</p> <p>1 Q Is that your signature on the last page? 2 A Yes. 3 Q Did you write this report? 4 A I provided the input to it and I set up the 5 initial draft, and then it got rearranged, and we talked 6 about it, and I did the final edits on it and approved 7 it. 8 Q So on paragraph 9 you state that you understand 9 that Lancium's taken the position that claim construction 10 is not necessary. Do you see that? 11 A Paragraph 9? 12 Q Yes. 13 A No, I don't see that. Is that on page -- 14 paragraph 8? 15 Q Maybe. Maybe I mislabeled it here. 16 A Yeah. Paragraph 8 talks about plain and 17 ordinary meaning. Yeah. Position that claim 18 construction is unnecessary, that's paragraph 8. 19 Q Okay. What is the basis for your opinion or 20 your understanding there that you believe that Lancium 21 has taken the position that claim construction is not 22 necessary? 23 A That's what I was informed, and I understand 24 that there hasn't been -- normally intellectual property</p>	<p style="text-align: right;">Page 249</p> <p>1 that corroborating conception alone is enough for a 2 would-be inventor to be considered a joint inventor? 3 A Corroborating evidence is required. So 4 corroborating -- You're asking if corroborating evidence 5 alone -- in the absence of what else? Right. There's a 6 claim that says I'm an inventor and I have conception and 7 it's obvious that it has the idea, and then you find 8 corroborating evidence that -- That's my understanding of 9 how this works. I don't understand your question. 10 Q Let me see if I can ask it differently. So in 11 forming your analysis -- your opinions, did you form your 12 opinions based on the idea if Mr. Storms could 13 corroborate that he had conceived the different elements 14 or some of the elements of the '433 patent that that 15 alone was enough for him to be considered a joint 16 inventor, or did you form your opinion based on that he 17 must corroborate that the information that he 18 communicated to Mr. McNamara was information that 19 disclosed aspects -- claimed aspects of the inventions? 20 A An inventor may prove his conception by 21 testimony, by corroborating evidence, documents, and so 22 on. Some corroborating evidence is required. So you 23 have to prove -- so corroborating evidence is separate 24 from conception. Corroborating evidence corroborates</p>

<p style="text-align: right;">Page 250</p> <p>1 conception.</p> <p>2 Q But my question is, in forming your opinions,</p> <p>3 did you focus on the corroboration of conception only, or</p> <p>4 did you focus on corroborating the evidence --</p> <p>5 corroborating what Mr. Storms communicated to</p> <p>6 Mr. McNamara and that whatever that was met the elements</p> <p>7 of the claims?</p> <p>8 A To establish as evidence of -- as evidence</p> <p>9 corroborating inventorship by Mr. Storms, the primary</p> <p>10 evidence there was documents that were produced that</p> <p>11 showed the development of the system in various stages,</p> <p>12 as well as the source code. Right. The evidence that</p> <p>13 corroborates the communication is the stuff that was</p> <p>14 exchanged. So evidence -- The evidence that was</p> <p>15 exchanged to corroborate the communication plays a double</p> <p>16 role.</p> <p>17 Q Okay. Do you have an understanding that</p> <p>18 Mr. Storms worked with Mr. McNamara to develop</p> <p>19 Mr. Storms' systems?</p> <p>20 A Storms worked with McNamara?</p> <p>21 Q Yeah, to develop Storms' systems.</p> <p>22 MR. RICORDATI: Object to form.</p> <p>23 THE WITNESS: No. It looked to me based on the text</p> <p>24 messages that we were looking at earlier that Storms had</p>	<p style="text-align: right;">Page 252</p> <p>1 So do you have an understanding that the</p> <p>2 Bearbox simulation would permit the miners to operate at</p> <p>3 less than 100 percent capacity?</p> <p>4 A The Bearbox -- the Bearbox simulation that we</p> <p>5 have only operates the miners at 100 percent capacity.</p> <p>6 It seems clear that they could operate at something less</p> <p>7 than 100 percent capacity.</p> <p>8 Q You're not aware of any code or anything that</p> <p>9 was written that would accomplish that?</p> <p>10 MR. RICORDATI: Object to form.</p> <p>11 THE WITNESS: Well, making a system operate at less</p> <p>12 than 100 percent capacity involves interacting with both</p> <p>13 the operating system and the application. And it's</p> <p>14 possible that the mining application can be controlled to</p> <p>15 change the amount of CPU time spent on there, so it's</p> <p>16 pretty straightforward to manipulate the Bearbox system</p> <p>17 to communicate with the miners and slow them down or</p> <p>18 speed them up. It's built into the open source code.</p> <p>19 MR. NELSON: Q So my question was, has Mr. Storms</p> <p>20 written any source code that actually accomplished that?</p> <p>21 MR. RICORDATI: Object to form.</p> <p>22 THE WITNESS: I don't recall offhand. We can run</p> <p>23 through the code and take a look.</p> <p>24 MR. NELSON: Q I don't see it in your report. If</p>
<p style="text-align: right;">Page 251</p> <p>1 a system developed, which is these documents that we've</p> <p>2 been going over, and he provided that to Mr. McNamara.</p> <p>3 There wasn't a joint -- there may have been a joint</p> <p>4 development after that, but that particular activity was</p> <p>5 kind of one directional.</p> <p>6 MR. NELSON: Q Do you understand that Mr. McNamara</p> <p>7 worked with Mr. Storms to develop the Lancium system?</p> <p>8 MR. RICORDATI: Object to form.</p> <p>9 THE WITNESS: McNamara worked with Storms to develop</p> <p>10 the Lancium system?</p> <p>11 MR. NELSON: Q Yes.</p> <p>12 A No.</p> <p>13 Q So on paragraph 12 of your report you state</p> <p>14 that you note that Dr. Ehsani does not rely on the</p> <p>15 deposition testimony or any other discussions with either</p> <p>16 named inventor McNamara or Cline.</p> <p>17 Do you see that?</p> <p>18 A Uh-huh.</p> <p>19 Q On what do you base that?</p> <p>20 A I don't recall seeing in Ehsani's report that</p> <p>21 he relied on depositions from the inventors.</p> <p>22 Q Anything else?</p> <p>23 A No.</p> <p>24 Q In paragraph 13 -- Let me -- Strike that.</p>	<p style="text-align: right;">Page 253</p> <p>1 it was in the code, would it be in your report?</p> <p>2 A If it's in the code, it should be mentioned in</p> <p>3 the appendix in the report.</p> <p>4 Q I have not seen it in there either so --</p> <p>5 A Okay. Well, I can look through real quick and</p> <p>6 see if it's there.</p> <p>7 Q You make the statement in the reply report.</p> <p>8 So --</p> <p>9 A Which paragraph we talking about again, 13?</p> <p>10 Q I think it's 13. I don't know if you make the</p> <p>11 exact statement. My question was whether or not you're</p> <p>12 aware whether -- that Bearbox had written code that would</p> <p>13 enable the miners to operate at less than 100 percent</p> <p>14 capacity.</p> <p>15 MR. RICORDATI: Object to form.</p> <p>16 THE WITNESS: I don't recall offhand without looking</p> <p>17 into the appendix and seeing if there's anything that</p> <p>18 indicates that and then looking back at the code.</p> <p>19 MR. NELSON: Q So let me direct your attention to</p> <p>20 paragraphs 28 and 29 of your reply report.</p> <p>21 A Okay.</p> <p>22 Q Really paragraph 29.</p> <p>23 A Got it.</p> <p>24 Q So you disagree that Dr. -- with Dr. Ehsani's</p>

<p style="text-align: right;">Page 254</p> <p>1 allegation that Mr. McNamara and Cline are the sole 2 inventors of limitation 1(d) of Claim 1, at least because 3 the Lancium system did not consider multiple time 4 intervals with associated power thresholds until after 5 its communication with Storms. I assume by its you mean 6 Mr. McNamara's?</p> <p>7 A Lancium's communication with Storms, whoever 8 was representing Lancium.</p> <p>9 Q Are you aware of any other communications 10 between anyone at Lancium and Mr. Storms other than 11 Mr. McNamara's?</p> <p>12 A I think McNamara was the only one, but this -- 13 the terminology there is focusing on Lancium system and 14 Lancium communications.</p> <p>15 Q Okay. You also state then that the Lancium 16 system did not determine a performance strategy 17 encompassing multiple time intervals with associated 18 power thresholds prior to its communications with Storms. 19 Do you see that?</p> <p>20 A Uh-huh.</p> <p>21 Q So other than those two reasons, are there any 22 other reasons that you disagree with Mr. Ehsani that 23 McNamara and Cline are not the sole inventors? 24 MR. RICORDATI: Object to form.</p>	<p style="text-align: right;">Page 256</p> <p>1 intervals, that's information -- that's a statement taken 2 from the claim language.</p> <p>3 Q At least because is not used in this claim 4 language?</p> <p>5 A No. The stuff after at least because is.</p> <p>6 Q Right. But your opinion -- you give two 7 reasons, but you qualify it with at least, and my 8 question is are there -- do you have other reasons that 9 are not in this report that you believe McNamara and 10 Cline are not the sole inventors?</p> <p>11 A I don't know why there need to be other reasons 12 because those cover the claim language.</p> <p>13 Q That's not my question. My question is, do you 14 have other opinions that aren't in this report that 15 indicate Mr. McNamara or Cline are not the sole 16 inventors, or are all -- or are your opinions connected 17 -- are your opinions -- are the opinions contained in the 18 report complete?</p> <p>19 A The opinions contained in the report are 20 focused on the specific claim language of the claim 21 element. That's why it says at least because, because it 22 outlines the elements of the claim.</p> <p>23 Q And for this claim element you give two 24 reasons, and are those -- is your report complete that</p>
<p style="text-align: right;">Page 255</p> <p>1 THE WITNESS: It seems clear to me that what Storms 2 conceived of and implemented in simulation filled in some 3 gaps in the Lancium strategy as well as extended some 4 possibilities for the Lancium system.</p> <p>5 MR. NELSON: Q Well, your opinion here -- and you 6 expressed in your reply report is your disagreements with 7 Dr. Ehsani and later on with Dr. Baer -- with Mr. Baer, 8 correct?</p> <p>9 A Yeah.</p> <p>10 Q And in paragraph 29 you give two reasons why 11 you disagree with Dr. Ehsani's allegation that McNamara 12 and Storms were the sole inventors of element 1(d), 13 right?</p> <p>14 A Uh-huh.</p> <p>15 Q And you qualify that with at least because, do 16 you see that?</p> <p>17 A Uh-huh.</p> <p>18 Q And so my question is does this report contain 19 all of the reasons that you believe McNamara and Storms 20 were not the sole inventors of element 1(d)?</p> <p>21 A Well, that language is taken directly from the 22 claim element, and so at least because claim element 23 considered multiple time intervals, at least because 24 determine the performance strategy multiple time</p>	<p style="text-align: right;">Page 257</p> <p>1 those are the only reasons you believe that Mr. Storms 2 and Mr. McNamara are not the inventors of this element?</p> <p>3 A Those are the only reasons necessary to cover 4 this claim element.</p> <p>5 Q So is the answer yes?</p> <p>6 A The report focuses on the language in the claim 7 element, so that's why that's worded that way. So 8 there's no need to --</p> <p>9 Q So you have no other opinions that you're going 10 to offer at trial, for example, that are different than 11 what's in paragraph 29 with respect to this claim 12 element?</p> <p>13 A Well, those reasons cover the claim element.</p> <p>14 Q So the answer to my question is yes. You have 15 no other opinions that you intend to offer at trial that 16 are different than the ones in paragraph 29?</p> <p>17 A I wouldn't say it that way. I would say that 18 the reports are always couched with other data may change 19 some of the opinions that are expressed in the report, 20 but right now the report -- the purpose of the report is 21 to focus on the elements of the claim, and that's what 22 the report does.</p> <p>23 Q And so you used the term -- you used the phrase 24 in paragraph 29 associated power thresholds. That's not</p>

<p style="text-align: right;">Page 258</p> <p>1 in the claim, is it?</p> <p>2 A Yeah. There's the threshold associated with</p> <p>3 each time interval, that's the claim language. Right at</p> <p>4 the end.</p> <p>5 Q So is that -- Are you referring -- Multiple</p> <p>6 time intervals with associated power threshold, the time</p> <p>7 -- the power thresholds that are associated with each</p> <p>8 time interval, the claim language there is referring to</p> <p>9 the minimum power thresholds, isn't it?</p> <p>10 A Well, that's the power thresholds that it's</p> <p>11 referring to, yeah.</p> <p>12 Q So you're -- when you use the word associated</p> <p>13 power thresholds here, you mean minimum power thresholds?</p> <p>14 A The claim says --</p> <p>15 Q The claims says: Wherein each power</p> <p>16 consumption target is equal or greater than the minimum</p> <p>17 power threshold associated with each time interval.</p> <p>18 A Yeah. Those are the time intervals associated</p> <p>19 with each time interval.</p> <p>20 Q You use the word associated power thresholds.</p> <p>21 A Probably would have been clearer to say exact</p> <p>22 -- use exactly the claim language, the minimum power</p> <p>23 threshold associated with each time interval, but it just</p> <p>24 kind of -- the verbiage is kind of turned around.</p>	<p style="text-align: right;">Page 260</p> <p>1 language in a lot of places in the report. I'm just</p> <p>2 focusing on this paragraph. But you say: Dr. Ehsani</p> <p>3 conflates minute details of the simulation Storms built</p> <p>4 with the full breadth of the capability at which the</p> <p>5 system both described in the various documents and</p> <p>6 embodied in the simulation serve as proof of concepts.</p> <p>7 Do you see that?</p> <p>8 A Yeah.</p> <p>9 Q So you're criticizing Dr. Ehsani there, but</p> <p>10 does that mean that you're agreeing that Dr. Ehsani's</p> <p>11 paragraph 118 is correct but he's just conflating the</p> <p>12 minute details, or do you believe he's not correct?</p> <p>13 A This has a quote for part of paragraph 181. Do</p> <p>14 we need to look at the entire paragraph 181 or are you</p> <p>15 talking about the quote that's contained in here?</p> <p>16 Q You can look at the entire paragraph 181 too if</p> <p>17 you want.</p> <p>18 A Well, he says in the quote, for grins, he says</p> <p>19 in the quote: Additionally, I understand that it is not</p> <p>20 disputed that Storms' simulation did not communicate with</p> <p>21 an ISO or QSE. I mean, that's not in dispute, so I don't</p> <p>22 disagree with him there. The simulation, therefore,</p> <p>23 could not receive power option data, not directly from</p> <p>24 the QSE, and not based on a power option agreement. I</p>
<p style="text-align: right;">Page 259</p> <p>1 Q So just to be clear, what you mean to say by</p> <p>2 associated power thresholds is the minimum power</p> <p>3 thresholds associated with each time interval?</p> <p>4 A Those are the thresholds that are provided in</p> <p>5 the data, yeah. So it's the minimum power thresholds</p> <p>6 that are provided in the data.</p> <p>7 Q So just to be clear -- Because you use this</p> <p>8 phrasing throughout your report in connection with</p> <p>9 minimum power threshold, and I just want to understand</p> <p>10 your opinion. So in paragraph 29, when you're using the</p> <p>11 word associated power thresholds, you are intending to</p> <p>12 refer to the minimum power threshold associated with each</p> <p>13 time interval?</p> <p>14 A Yes. It's supposed -- it's supposed to</p> <p>15 correspond with the claim language. It's just a</p> <p>16 simplification. There's a threshold associated with each</p> <p>17 time interval. The threshold can be changed between time</p> <p>18 intervals. The threshold is -- According to the power</p> <p>19 agreement, the threshold is a minimum consumption target.</p> <p>20 Q So let's go to paragraph 76.</p> <p>21 A Of the same report, the reply?</p> <p>22 Q Yeah, yeah.</p> <p>23 A Okay.</p> <p>24 Q At the very end of that -- and you use this</p>	<p style="text-align: right;">Page 261</p> <p>1 agree with that, because there was no power option data,</p> <p>2 but it could receive simulated power option data. And it</p> <p>3 could use that simulated power option data to perform --</p> <p>4 to create a performance strategy comprising a power</p> <p>5 consumption target for the set of computing systems for</p> <p>6 the interval that was either equal to or greater.</p> <p>7 The first half of that quote, I agree with.</p> <p>8 The second half of the quote is predicated on the actual</p> <p>9 connection with the ISO or the QSE, but it's a</p> <p>10 simulation. So we all agree that it's a simulation, but</p> <p>11 a simulation doesn't connect with the QSE. So the</p> <p>12 simulation can still do the stuff in the later part of</p> <p>13 the quote, and that's actually good engineering design.</p> <p>14 Before you unleash something on the world you test it in</p> <p>15 isolation. So I agree that -- everybody agrees that the</p> <p>16 simulation did not communicate with the QSE. Yeah. We</p> <p>17 agree with that.</p> <p>18 We disagree that it could not compute these</p> <p>19 other things because that's what the purpose of the</p> <p>20 simulation was for, to use simulated QSE data to cause</p> <p>21 these performance strategies to be realized.</p> <p>22 Q So turn to paragraph 77, couple paragraphs</p> <p>23 ahead.</p> <p>24 A Uh-huh.</p>

<p style="text-align: right;">Page 262</p> <p>1 Q And you have a statement in there about 2 simulations. Do you see that? 3 A Yeah. It's basically what I just said. 4 Q So looking at the last sentence, you state: 5 Based on my experience writing software, it's my opinion 6 that a POSA would understand that Mr. Storms' simulation 7 assumed an unlimited amount of power to test his 8 profitability determination algorithm, and that any real 9 world system would necessarily need to account for power 10 availability, and replacing Mr. Storms' assumed power 11 availability with data from an ISO or QSE was well known, 12 conventional that would have been required in the 13 ordinary skill. 14 Do you see that? 15 A Yes. 16 Q So did Mr. Storms -- Are there any other 17 assumptions that you're aware of that Mr. Storms' 18 simulation used? 19 A I can't think of any right off the bat. Since 20 it was a simulation there were probably a couple of other 21 ones, but the simulation describes the function of the 22 system with sufficient fidelity for someone to take the 23 information that was passed and take the simulation 24 output that was passed and understand how the system</p>	<p style="text-align: right;">Page 264</p> <p>1 features of the art as supposed contributions by 2 Mr. McNamara and Cline. 3 Do you see that? 4 A Yes. 5 Q I need to -- Let me hand you Dr. Ehsani's 6 report. I guess -- I'll just mark it. 7 (Exhibit 206 marked as requested) 8 Q I only have two copies of that, I think. 9 So go to paragraph 203 of Dr. Ehsani's report. 10 A Yep. 11 Q And so 203 says: It is further my opinion -- 12 this is Dr. Ehsani speaking -- it's further my opinion 13 that Lancium's documentation indicates that 14 Messrs. McNamara and Cline -- and/or Cline conceived this 15 element independently and without utilizing any 16 information or allegedly provided by Mr. Storms as 17 described above in paragraphs 115 and 116. 18 Do you see that? 19 A Uh-huh. 20 Q So let's go to paragraphs -- So you make a 21 statement with respect to -- in your paragraph 89 22 Dr. Ehsani mischaracterizing well-known principles. So 23 let's go back now to 115 and 116 of Dr. Ehsani's report. 24 A Uh-huh.</p>
<p style="text-align: right;">Page 263</p> <p>1 functioned. 2 Q So in paragraph 78 you talk about Dr. Cline, 3 and you basically state right before the quote portions 4 of Dr. Cline's deposition that Cline had no issues 5 deciphering the methodology embodied in the spreadsheet. 6 Do you see that? 7 A Uh-huh. 8 Q Do you have an understanding of what 9 Mr. Cline's technical background is? 10 A No. 11 Q Do you know whether Mr. Cline would be 12 considered a person of ordinary skill under your 13 definition? 14 A I may have looked at his qualifications 15 sometime ago, but I don't recall them right off the bat. 16 I think he would be a person of ordinary skill. 17 Q Do you think he would be a person of 18 extraordinary skill? 19 A I can't speak to that. 20 MR. RICORDATI: Objection to form. 21 MR. NELSON: Q So if you go to paragraph 89. 22 A Yep. 23 Q And paragraph 89 says: In paragraph 203, 24 Dr. Ehsani mischaracterizes well-known principles and</p>	<p style="text-align: right;">Page 265</p> <p>1 Q And take a look at those. And my question is, 2 looking at paragraphs 115 and 116, do you believe those 3 paragraphs describe well-known principles? 4 A Flexible data center, could ramp and absorb and 5 drop power within five-minute windows, operate it 6 remotely, that's fairly straightforward. Respond to 7 signals from grid operators, again relatively 8 straightforward. Aware of ERCOT and peripherally aware 9 of ancillary services, that's not inventive. McNamara 10 and Cline developed technology, blah, blah, blah. 11 Paragraph 116, it was not until 2019 that they 12 appreciated the benefits of applying their technology to 13 ancillary servs, I guess that means services, and that is 14 when they subsequently conceived of using their 15 technology for receiving power option data based on a 16 power option agreement. That's standard contractual 17 stuff. Specifying a set of minimum power thresholds and 18 a set of time intervals, again standard stuff, in 19 furtherance of performing ancillary services with their 20 fast ramping data centers. 21 Q So if I understand correctly, based on your 22 paragraph 89, it's your belief that the information in 23 Dr. Ehsani's report in paragraphs 115 and 116 are 24 well-known principles and features of the art, is that</p>

<p style="text-align: right;">Page 266</p> <p>1 fair?</p> <p>2 A Well, further in paragraph 116, it talks about</p> <p>3 -- Ehsani says, in my opinion this was the flash of</p> <p>4 insight that lead to conception. Because this is when</p> <p>5 they understood that their system would need to receive</p> <p>6 the award -- that's standard stuff -- which would be sent</p> <p>7 to Lancium in response to the accepted prior offer, which</p> <p>8 is a power option agreement, and that the award includes</p> <p>9 the minimum power thresholds, the awarded offer, this is</p> <p>10 open information on ERCOT's stuff, all right.</p> <p>11 So they had a flash of insight that was not</p> <p>12 inventive. It was a flash of incite that was a</p> <p>13 realization they had to enter into a business contract</p> <p>14 under certain conditions and they had to comply with that</p> <p>15 contract. Now, that flash of insight is not conception.</p> <p>16 It's realization. So that's what this paragraph 89 says,</p> <p>17 well-known principles and features of the art as</p> <p>18 contributions by McNamara and Cline. McNamara and</p> <p>19 Cline -- he talks about a flash of insight that is not a</p> <p>20 flash of insight. It's a flash of realization.</p> <p>21 Q So you have -- I won't go through all of them,</p> <p>22 but you have a similar paragraph throughout your reply</p> <p>23 report referring to different Ehsani paragraphs where you</p> <p>24 basically say the same thing. You say Dr. Ehsani</p>	<p style="text-align: right;">Page 268</p> <p>1 report -- 15 of your reply report?</p> <p>2 A Okay.</p> <p>3 Q There you're talking about the '632</p> <p>4 application, and if you look at the last sentence you</p> <p>5 say: The system described in the '632 application,</p> <p>6 however, merely responds to current conditions and reacts</p> <p>7 when a threshold condition is met, e.g. starting lining</p> <p>8 when energy producer is selling power to the grid at a</p> <p>9 negative priced, closed paren.</p> <p>10 Do you see that?</p> <p>11 A Uh-huh. Yes.</p> <p>12 Q What did you mean by?</p> <p>13 A The system in the '632 application is purely</p> <p>14 reactive. It doesn't do any proactive estimation, it</p> <p>15 doesn't think about anything, any other options. It just</p> <p>16 reacts to the current conditions.</p> <p>17 Q All right. So '632 then, in your opinion,</p> <p>18 doesn't -- doesn't respond to future expected conditions</p> <p>19 at all?</p> <p>20 A It's -- the '632 application in my opinion and</p> <p>21 from what I recall of it and what I wrote here is that</p> <p>22 it's looking at instantaneous conditions and reacting</p> <p>23 based on that.</p> <p>24 Q And it's making decisions then to mine or not</p>
<p style="text-align: right;">Page 267</p> <p>1 mischaracterizes well-known principles and features of</p> <p>2 the art as supposed contributions. So is it fair that</p> <p>3 wherever you're using that language referring to</p> <p>4 Dr. Ehsani's report, it's your opinion that what</p> <p>5 Dr. Ehsani is referring to was something that was already</p> <p>6 well-known?</p> <p>7 A Yeah. I mean -- That's what it says. He</p> <p>8 mischaracterizes well-known principles and features of</p> <p>9 the art as supposed contributions. It might have been</p> <p>10 better to say as supposed conception rather than</p> <p>11 contributions, because in that paragraph that we just</p> <p>12 read there was no contribution. That was a realization</p> <p>13 they had to enter into a business agreement.</p> <p>14 MR. NELSON: Why don't we take about a five-minute</p> <p>15 break here.</p> <p>16 MR. RICORDATI: Okay.</p> <p>17 THE VIDEOGRAPHER: The time is 5:07 p.m. We're</p> <p>18 going off the video record.</p> <p>19 (Off the record)</p> <p>20 THE VIDEOGRAPHER: The time is 5:24 p.m. and we're</p> <p>21 back on the video record.</p> <p>22 MR. NELSON: Q Good afternoon, Dr. McClellan.</p> <p>23 A Yes.</p> <p>24 Q So turn to paragraph 6 -- 615 of your reply</p>	<p style="text-align: right;">Page 269</p> <p>1 mine based on those instantaneous decisions?</p> <p>2 A Yeah, or do something, yeah.</p> <p>3 Q In your opinion was Mr. Storms the first person</p> <p>4 to conceive of the concept of using a breakeven price for</p> <p>5 mining bitcoin to make the decision whether or not to</p> <p>6 mine or not mine at a certain power price?</p> <p>7 A I've certainly never seen it before.</p> <p>8 Q In your opinion was Mr. Storms the first person</p> <p>9 to have the idea of selling power back to the grid if it</p> <p>10 was more profitable to sell that power than to use that</p> <p>11 power?</p> <p>12 A I think that's standard ERCOT business model.</p> <p>13 Q So no is the answer?</p> <p>14 A Yeah.</p> <p>15 Q In your opinion was Mr. Storms the first person</p> <p>16 to have the idea of buying power on the day-ahead market</p> <p>17 and then selling power back to the grid at the realtime</p> <p>18 price if doing so was more profitable than using the</p> <p>19 power?</p> <p>20 A I don't know if he was the first person to do</p> <p>21 that or not, no. I think that he was the first person to</p> <p>22 do that in the context of a tradeoff with bitcoin mining,</p> <p>23 but I haven't seen any other systems that do that.</p> <p>24 Q That do that with respect to bitcoin mining or</p>

<p style="text-align: right;">Page 270</p> <p>1 that do that generally?</p> <p>2 A As I mentioned, I haven't seen anything like</p> <p>3 what he had done.</p> <p>4 Q Okay. My question though was not specific to</p> <p>5 bitcoin mining. So I just want to make sure we're on the</p> <p>6 same page with the question and the answer. My question</p> <p>7 was, in your opinion was Mr. Storms the first person to</p> <p>8 have the idea of buying power on the day-ahead market and</p> <p>9 then selling that power back to the grid at realtime</p> <p>10 prices if doing so was more profitable than using the</p> <p>11 power?</p> <p>12 A I doubt it. That seems like a pretty</p> <p>13 straightforward strategy. Very dangerous, but</p> <p>14 straightforward.</p> <p>15 Q So look at paragraph 218 of your reply.</p> <p>16 A Okay.</p> <p>17 Q So you make a statement there that Storms'</p> <p>18 method of arbitrage as depicted in Bearbox page 97 --</p> <p>19 Bearbox Bates No. 97 matches Mr. Storms' --</p> <p>20 Mr. McNamara's Excel spreadsheet, Exhibit 15 to your</p> <p>21 report, which is later described in a Lancium</p> <p>22 presentation for investors.</p> <p>23 Do you see that?</p> <p>24 A Yes.</p>	<p style="text-align: right;">Page 272</p> <p>1 Q And that is the economic turn down example?</p> <p>2 A Yeah.</p> <p>3 Q So is it your opinion that the other four</p> <p>4 things on this -- on page 35855 also relate to</p> <p>5 Mr. Storms' arbitrage method or something different?</p> <p>6 A They're all kind of interrelated, but it's</p> <p>7 primarily economic turn downs thing that's the hash or</p> <p>8 cache thing is very explicitly related to Storms.</p> <p>9 Q Well, do you think transmission cost avoidance</p> <p>10 for CP is related to Storms' arbitrage method?</p> <p>11 A No.</p> <p>12 Q Do you think ancillary services dynamic pricing</p> <p>13 and optimization is related to Storms' arbitrage method?</p> <p>14 A It's the same general concept with bitcoin</p> <p>15 replaced by something else. So it's not Storms' --</p> <p>16 that's not Storms' invention.</p> <p>17 Q Is it Storms' arbitrage method?</p> <p>18 A It's -- it seems to be a form of arbitrage</p> <p>19 method, but that's the only detail we have on it. It</p> <p>20 doesn't seem to be related to Storms directly.</p> <p>21 Q Selling out the money OTM covered call out</p> <p>22 options, is that related to Storms' arbitrage method or</p> <p>23 Storms' alleged arbitrage method?</p> <p>24 A It could be.</p>
<p style="text-align: right;">Page 271</p> <p>1 Q And in the presentation you label it Lancium --</p> <p>2 you identify it Lancium 35852 through 35856. Do you see</p> <p>3 that?</p> <p>4 A That's the presentation.</p> <p>5 Q Let me hand you that presentation here.</p> <p>6 (Exhibit 207 marked as requested)</p> <p>7 Q I hand you what's been marked as Exhibit 207.</p> <p>8 A Right.</p> <p>9 Q So you refer to five -- five pages of that</p> <p>10 exhibit, Lancium 35852 through 35856. Do you see that?</p> <p>11 A Yeah. It's Section 5 of that presentation,</p> <p>12 yeah.</p> <p>13 Q Okay. I want to focus you -- specifically on</p> <p>14 -- well --</p> <p>15 MR. RICORDATI: What page was that, Counsel?</p> <p>16 MR. NELSON: 35852 through 35856.</p> <p>17 Q You say all of these pages describe Mr. Storms'</p> <p>18 arbitrage method, is that right?</p> <p>19 A The original spreadsheet does, and this page --</p> <p>20 this section of this report talks about their growth</p> <p>21 strategy that leverages that arbitrage method. It's</p> <p>22 specifically the example on 35855. There's an example in</p> <p>23 one of the cells on 35855 that seems to almost come</p> <p>24 verbatim from that spreadsheet.</p>	<p style="text-align: right;">Page 273</p> <p>1 Q How?</p> <p>2 A Because it involves bitcoin mining versus</p> <p>3 selling back profit, selling back power, all these ones</p> <p>4 under energy and bitcoin hash with the gray bar on the</p> <p>5 left-hand side, all of those are kind of related.</p> <p>6 Q Do you know how selling out the money OTM</p> <p>7 covered call out options work?</p> <p>8 A This is the only description I have right here.</p> <p>9 Next week power is trading at 35, so we're going to mine,</p> <p>10 right. That's the same sort of thing as what Storms had.</p> <p>11 We can sell calls next week, that's associated with</p> <p>12 variability in the market.</p> <p>13 Q So how does the selling out of the money OTM</p> <p>14 covered call out option method work?</p> <p>15 MR. RICORDATI: Objection, asked and answered.</p> <p>16 THE WITNESS: If you look at the subsequent cell</p> <p>17 there, it talks old generation miners which could be</p> <p>18 viewed as super cheap out of the money option on bitcoin</p> <p>19 price --</p> <p>20 MR. NELSON: Q Let me stop you for a second.</p> <p>21 Because that's a separate cell and a separate thing,</p> <p>22 isn't it?</p> <p>23 A Yeah, but it uses the out of the money concept</p> <p>24 so it's related.</p>

<p style="text-align: right;">Page 274</p> <p>1 Q Okay. So --</p> <p>2 A This says old generation miners can be viewed</p> <p>3 as a super cheap out of the money option on bitcoin</p> <p>4 price. So old generation miners are a cheap out of the</p> <p>5 money option because they consume more power versus the</p> <p>6 amount of bitcoin revenue they generate. So that's</p> <p>7 related.</p> <p>8 Q So do you know how selling out of the money OTM</p> <p>9 covered call options actually works?</p> <p>10 MR. RICORDATI: Objection. Asked and answered.</p> <p>11 THE WITNESS: No. I only know what's written right</p> <p>12 here, and this is all similar sort of stuff as certain</p> <p>13 types of stock market investing so it's the same</p> <p>14 concepts.</p> <p>15 MR. NELSON: Q You're just making the assumption</p> <p>16 based on written -- When you say the same concept, what</p> <p>17 do you mean?</p> <p>18 A Well, there's a call -- there's covered call</p> <p>19 options in stock market investing. There's calls and</p> <p>20 puts and different kind of risk investments. Right.</p> <p>21 It's the same sort of idea. This is -- this is hedging</p> <p>22 against risk versus taking advantage of risk.</p> <p>23 Q So are you saying that Mr. Storms' arbitrage</p> <p>24 method is the same concept as stock options, calls, and</p>	<p style="text-align: right;">Page 276</p> <p>1 across bitcoin mining installations, you can take</p> <p>2 advantage of that.</p> <p>3 Q And other than what -- the opinion you just</p> <p>4 gave, do you have any other opinion regarding the</p> <p>5 relationship or alleged relationship between Mr. Storms'</p> <p>6 allegedly converted breakeven arbitrage method and block</p> <p>7 four on Lancium 35855?</p> <p>8 A No. I'm just reading what's here and trying to</p> <p>9 interpret it in the context that you're talking about,</p> <p>10 but it is clearly related because it's related to energy</p> <p>11 and bitcoin hashing. So it's optimization of profit</p> <p>12 based on trading energy and/or bitcoin futures.</p> <p>13 Q And do you think that's simply optimizing</p> <p>14 profit based on energy and bitcoin futures, do you think</p> <p>15 that would -- that if a company used a system that did</p> <p>16 that or Lancium used a system that did that, that is</p> <p>17 utilizing information allegedly converted from</p> <p>18 Mr. Storms?</p> <p>19 A Yeah, the bitcoin break even issue and the</p> <p>20 tradeoff of using bitcoin versus selling power back.</p> <p>21 Right. If you can compute bitcoin break even in the</p> <p>22 future based on different types of bitcoin mining</p> <p>23 operations, the different costs associated with those,</p> <p>24 and the different costs and potential profits associated</p>
<p style="text-align: right;">Page 275</p> <p>1 puts except done in the bitcoin context?</p> <p>2 MR. RICORDATI: Object to form.</p> <p>3 THE WITNESS: No.</p> <p>4 MR. NELSON: Q So how is selling out the money OTM</p> <p>5 covered call options -- how is that related to Mr.</p> <p>6 Storms' alleged -- allegedly converted breakeven</p> <p>7 arbitrage method?</p> <p>8 A Well, it has something to do with bitcoin</p> <p>9 mining because it's in this group of energy and bitcoin</p> <p>10 hash. Right. So it's related through the fact that it</p> <p>11 uses bitcoin miners as some form of hedging or some form</p> <p>12 of speculation.</p> <p>13 Q So other than that, do you have any other</p> <p>14 opinion as to how it's related to Mr. Storms' allegedly</p> <p>15 converted arbitrage method?</p> <p>16 A No, I'm just reading what's here.</p> <p>17 Q The same question with respect to the open</p> <p>18 position management dynamic hedging, how is that, if at</p> <p>19 all, related to Mr. Storms' allegedly converted breakeven</p> <p>20 arbitrage method?</p> <p>21 A Well, this is talking specifically about a</p> <p>22 cheap out of the money option. So it relates to out of</p> <p>23 money option based on bitcoin miners that are less</p> <p>24 efficient. Right. So if you have -- if you can compare</p>	<p style="text-align: right;">Page 277</p> <p>1 with the power, that's exactly what Storms' simulation</p> <p>2 did.</p> <p>3 Q So is that the crux of the alleged conversion</p> <p>4 in your view is Storms' simulation was able to allegedly</p> <p>5 utilize the ability to sell -- calculate whether it made</p> <p>6 sense to mine bitcoin and use the power or whether it</p> <p>7 made sense not to mine bitcoin and sell the power back?</p> <p>8 Is that what is the allegedly converted technology here?</p> <p>9 A Storm's simulation is an automated</p> <p>10 cherrypicker, and it's the first time I've seen anybody</p> <p>11 do this kind of automated cherrypicking using bitcoin</p> <p>12 versus energy futures.</p> <p>13 Q Have you seen such automated cherrypicking</p> <p>14 using other -- in other industries using other things?</p> <p>15 A Yes, yep.</p> <p>16 Q What industries?</p> <p>17 A Computer industry, cost of memory.</p> <p>18 Q Anything else?</p> <p>19 A I haven't seen it using -- cherrypicking is --</p> <p>20 Well, let me phrase it a different way. I've seen things</p> <p>21 in the computer industry based on things like future cost</p> <p>22 of memory and locking customers in, which is a -- similar</p> <p>23 to a power option agreement, locking customers into a</p> <p>24 price and betting that the memory price will go down and</p>

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1 hedging against the memory price going up. Right. It's
 2 nothing to do with bitcoin because not associated with
 3 bitcoin. Storms did something different where he's
 4 essentially running two simulations in parallel and
 5 cherry-picking between them, or three simulations in
 6 parallel and cherry-picking between them to maximize.
 7 I've only seen that in an information theory context that
 8 had to do with coding gain for encryption and compression
 9 methods.
 10 MR. NELSON: Can we go off the record real quick?
 11 THE VIDEOGRAPHER: The time is 5:43 p.m. and we're
 12 going off the video record.
 13 (Off the record)
 14 THE VIDEOGRAPHER: The time is 5:48 p.m. and we're
 15 back on the video record.
 16 MR. NELSON: Q Dr. McClellan, in -- you read
 17 Dr. Ehsani's report, correct?
 18 A Yes.
 19 Q And he cites a lot of documents in there,
 20 correct?
 21 A Correct.
 22 Q Deposition testimony, other things?
 23 A Right.
 24 Q Did you read all the documents that he cited in

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1 his report?
 2 A Some of them were common between the ones that
 3 I had already read. I didn't read all of them.
 4 Q You did not read --
 5 A I skimmed through some of the ones that I
 6 hadn't seen before.
 7 Q So you did not read all the documents that
 8 Dr. Ehsani cited in his report?
 9 A Not in great detail, not all of them.
 10 Q Did you look at all the documents that
 11 Dr. Ehsani cited in his report?
 12 A I think I looked at the vast majority of them,
 13 but I don't recall exactly which ones I looked at and
 14 which ones I didn't.
 15 Q So sitting here right now, can you tell the
 16 jury whether you actually looked at all of the
 17 information that Dr. Ehsani cited in his report?
 18 A I don't think I looked at all of it.
 19 Q I may have misunderstood you earlier. Did you
 20 say that it's your opinion that Mr. Storms is the first
 21 person who considered the price of bitcoin and the price
 22 of the power that it costs to mine the bitcoin in
 23 conjunction in making a decision whether or not to mine
 24 the bitcoin?

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1 MR. RICORDATI: Objection.
 2 THE WITNESS: Go ahead.
 3 MR. RICORDATI: Objection. Mischaracterized
 4 testimony.
 5 THE WITNESS: No, that's not what I said.
 6 MR. NELSON: Q All right. What did you say with
 7 respect to what you believe Mr. Storms to be the first
 8 person to accomplish here?
 9 A I said that I hadn't seen anything like what
 10 he'd done in this context with bitcoin.
 11 Q And you say like what he'd done. So what is it
 12 that you think he's done that is different?
 13 A The -- I think we've explained that already.
 14 This cherry-picking concept I think was -- is -- is
 15 different. It's not something that I had seen before.
 16 Q And when you say cherry-picking concept, what do
 17 you mean?
 18 A Well, if you look at the -- if you look at what
 19 his simulation does, he's running -- he's racing three
 20 horses at the same time and then picking -- picking a
 21 different winner at different time points.
 22 Q What are those three horses?
 23 A The three revenue streams that are in the CSV
 24 file.

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1 Q And the day-ahead LMP revenue, you can't tell
 2 me how that is computed, correct?
 3 A I believe it is the day-ahead price multiplied
 4 by the number of units purchased or number of units
 5 committed to. I believe that's what it is.
 6 Q Let me mark this as another exhibit here.
 7 (Exhibit 208 marked as requested)
 8 Q Do you recognize what's on the first page of
 9 Bearbox 1?
 10 A These look like --
 11 Q The question is just relating to the first
 12 page. Do you recognize what's on the first page?
 13 A Looks like maybe a power device and some
 14 computing devices and some power distribution devices and
 15 some relays and a Python book.
 16 Q Do you know if that's Mr. Storms' simulation or
 17 not, the -- the miner that was run on his simulation?
 18 A I don't recall what -- the simulation is a
 19 simulation. It may have some hardware in the loop in
 20 some cases, but I think this was related to him trying to
 21 build controllable PDUs if I recall this correctly.
 22 Q Look at as many as you need to, Bearbox 3, 4,
 23 5. Do you know what -- do you know what that represents?
 24 A Yeah. That's a GUI that controls relays

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1 with -- the number 3 is GUI -- the control relays with
 2 buttons or to show status of relays that have -- 3, 4, 5,
 3 yeah.
 4 Q Is it to control relays or show status of them?
 5 A Well, it looks like those are buttons. So it
 6 may be able to control them with a GUI as well as show
 7 status.
 8 Q And the buttons here would be that you touch
 9 them and they're on and you touch them -- you touch the
 10 on and it turns on, you touch the off, it turns off, is
 11 that right?
 12 A If it's an interface that is reactive to those
 13 kind of inputs. It may also be able to display status
 14 from different types of state values.
 15 Q Look at page 21. Do you know what that is?
 16 A I got to find 21. Yeah. That looks like
 17 experimenting with controlling PDUs or building your own
 18 PDU and trying to control it.
 19 Q Do you know the physical location where this is
 20 taken?
 21 A My understanding is that was somewhere Austin
 22 Storms' garage or building or some sort of thing like
 23 that.
 24 Q Do you know if the location of 21 is the -- is

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1 the same location where the simulation was running?
 2 A I don't know.
 3 Q Do you know if the simulation was ever
 4 connected to Mr. Storms' PDUs as partially constructed in
 5 picture on page 21?
 6 A I think at different stages it was connected,
 7 but I don't know if the simulation data that was produced
 8 was based on that because I think the simulation was pure
 9 simulation.
 10 Q You say you think it was connected. My
 11 question is, do you know if it was connect the?
 12 A I said it may have been connected at some
 13 point, but I think -- I'm pretty sure the simulation data
 14 that we've been talking that's in the CSV file was just
 15 pure simulation data because there were no miners
 16 associated with it. So if there's no miners, why connect
 17 PDUs.
 18 Q And my question is, do you know if multiple
 19 miners were ever connected to PDUs in connection with
 20 Mr. Storms' running his simulation?
 21 A I can't say.
 22 Q Go to page 62. Do you know what that is?
 23 A Well, it's something that generates heat.
 24 Looks like a computer system.

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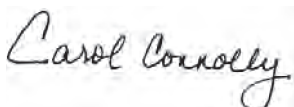
1 Q Other than that, do you know what it is?
 2 A And it's got an ether Internet cable into it.
 3 It's some sort of network based system that generates
 4 heat. That's why it's vented out. It may be a network
 5 connected fan assembly, there may be a computer. I don't
 6 know exactly.
 7 Q That's my question. You're speculating at what
 8 it is. Do you know what it is, yes or no?
 9 A Not just from the picture.
 10 Q Do you know what it is from other things?
 11 A No.
 12 Q What did you to investigate -- So you indicated
 13 what you thought Mr. Storms was the first to develop.
 14 What did you do to investigate whether he was in fact the
 15 first to develop what you indicated he was the first to
 16 develop?
 17 A I didn't indicate he was the first to develop.
 18 I said I've never seen anything like it before. I can't
 19 say if he's the first anywhere to develop anything like
 20 this.
 21 Q You said you've never seen anything like it
 22 before. Did you look for -- Have you done any looking
 23 for anything like what Mr. Storms had done?
 24 A Yeah. After I became aware of this case I

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1 looked around to see if there was any sort of concepts
 2 like this, and I haven't seen any. The controllable PDU
 3 stuff, I've seen PDUs that were controllable so I didn't
 4 pay much attention to that.
 5 Q Okay. So outside of the controllable PDU
 6 stuff, you said you did some looking. What did you do?
 7 A The question is are any of the concepts that
 8 Storms had, which is basically the arbitrage method, the
 9 cherrypicking method, does anything jump up like that.
 10 So I asked some people that I'm familiar with if they're
 11 familiar with different types of arbitrage methods using
 12 power systems. They were not familiar, and they're very
 13 knowledgeable.
 14 We talked to Mr. McCamant about it, and he said
 15 he had not seen anything like it. I -- you know, you do
 16 the Google, you Google for things like that, and I have
 17 not seen anything associated with bitcoin mining that was
 18 energy arbitrage so --
 19 Q Have you read the report of Mr. Shams Siddiqi
 20 in this case?
 21 A I have gone through it, yes.
 22 Q Do you know Mr. Siddiqi?
 23 A No.
 24 Q Is it your opinion that Mr. Storms' breakeven

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<p style="text-align: right;">Page 286</p> <p>1 arbitration method is covered by the claims of the '633 2 patent? 3 A The '433 or the '632? 4 Q Sorry. Let me try that again. 5 Is it your opinion that Mr. Storms' arbitration 6 method is disclosed in the '632 application? 7 A No. 8 Q Is it your opinion that Mr. Storms' breakeven 9 arbitration method is covered by the claims of the '433 10 patent? 11 A No. 12 Q Why not? 13 A Because the '433 patent doesn't really talk 14 about breakeven arbitration. 15 Q If this case goes to trial, do you intend to 16 appear on behalf of Bearbox? 17 A Yes. 18 MR. NELSON: I think with that I'll pass the 19 witness. 20 MR. RICORDATI: Can we take a five-minute break. 21 THE VIDEOGRAPHER: Okay. The time is 6:00 p.m. 22 We're going off the video record. 23 (Off the record) 24 THE VIDEOGRAPHER: The time is 6:09 p.m. We're back</p>	<p style="text-align: right;">Page 288</p> <p>1 can figure out the minimum power consumption of the load. 2 It's hard to hit a specific threshold. It's hard to hit 3 a specific power consumption number because you don't 4 control all of the aspects of the system, but it's easy 5 to keep it above a threshold. 6 Q When you determined the plain and ordinary 7 meaning of the term power option agreement, did you 8 interpret it to include at least the specific data 9 elements that are recited in the body of Claim 1 as well 10 as any other dependent claims referring to the power 11 option? 12 MR. NELSON: Objection. Leading. 13 THE WITNESS: Does he have to restate or do I have 14 to answer? 15 MR. RICORDATI: Q What -- I'll restate it. What -- 16 what elements did you include in determining the plain 17 and ordinary meaning of the term power option agreement? 18 MR. NELSON: Objection. Leading. 19 Go ahead. 20 THE WITNESS: Well, power option agreement is a 21 fairly standardized thing. It includes certain items 22 that are associated with the pre-purchase of units of 23 power. The claims in the patent and the other documents 24 have indicative values that are included in there. They</p>
<p style="text-align: right;">Page 287</p> <p>1 on the video record. 2 EXAMINATION 3 By Mr. Ricordati: 4 Q Dr. McClellan, if you could refer to 5 Exhibit 202. 6 A Okay. 7 Q And I'd like to direct your attention to 8 page -- 9 MR. NELSON: Is that his first report? 10 MR. RICORDATI: That's his first report, yes. 11 Q We're going to look at page 94, the module 12 descriptions. So in the fifth bullet point on page 94, 13 you refer to -- you use two words here -- so you refer to 14 miner_hash rate and KW -- KW_load. What does KW_load 15 refer to in the simulation? 16 A In the simulation KW_load is -- KW_load is the 17 amount of power to be consumed by the miner which 18 corresponds to the target. It's the target power 19 consumption of the miner which under the simulation 20 can -- corresponds to the minimum threshold. 21 Q Earlier you testified that it's tough to 22 maintain a load at a certain level. Is it difficult to 23 maintain a load above a certain threshold? 24 A No. No. If you know what the minimum -- you</p>	<p style="text-align: right;">Page 289</p> <p>1 might consider it a subset of the values that might be 2 included in there. 3 MR. RICORDATI: No further questions. 4 FURTHER EXAMINATION 5 By Mr. Nelson: 6 Q So, Dr. McClellan, during the break after I 7 concluded the deposition and you and counsel went outside 8 the room together, did you talk about the substance of 9 your testimony? 10 A No. I asked for feedback on whether I -- what 11 I screwed up. 12 Q What feedback did you get? 13 A I'll show you the beating later. 14 Q Do you remember any feedback you got? 15 A No. He always says the same thing, it doesn't 16 help. 17 Q Did you -- 18 A He always says he can't tell me that and I keep 19 asking. 20 Q Did you discuss -- Have you worked with this 21 counsel before? 22 A No, this is the only case. 23 Q Did you discuss the questions that counsel just 24 asked you?</p>

<p style="text-align: right;">Page 290</p> <p>1 A We discussed several different points that --</p> <p>2 that I asked about that I thought were potentially needed</p> <p>3 to be cleaned up or needed to be discussed, and then we</p> <p>4 discussed those at least those three questions -- those</p> <p>5 three concepts. We didn't discuss the question. We</p> <p>6 discussed the concept.</p> <p>7 Q What did you discuss about the concepts?</p> <p>8 A Well, the first question -- the first question</p> <p>9 was about the -- What was the question first question</p> <p>10 about? It was about the -- the first question was about</p> <p>11 the report and the appendix, and he said he was going to</p> <p>12 go back over the minimum power threshold and the load</p> <p>13 specification.</p> <p>14 The second question -- I don't even remember</p> <p>15 the second question at this point.</p> <p>16 Can you read it back?</p> <p>17 Q It was a question about being above a</p> <p>18 threshold.</p> <p>19 A Yeah. He asked me about -- When I said it was</p> <p>20 difficult to maintain a computer system at a specific</p> <p>21 power threshold, he wanted clarification on that I meant</p> <p>22 at a specific power threshold rather than above or below</p> <p>23 a specific power threshold, and I said I thought that</p> <p>24 that's what I had described earlier.</p>	<p style="text-align: right;">Page 292</p> <p>1 STATE OF ILLINOIS)</p> <p style="text-align: center;">) SS:</p> <p>2 COUNTY OF C O O K)</p> <p>3</p> <p>4 The within and foregoing deposition of the</p> <p>5 aforementioned witness was taken before CAROL CONNOLLY,</p> <p>6 CSR, CRR and Notary Public, at the place, date and time</p> <p>7 aforementioned.</p> <p>8 There were present during the taking of the</p> <p>9 deposition the previously named counsel.</p> <p>10 The said witness was first duly sworn and was</p> <p>11 then examined upon oral interrogatories; the questions</p> <p>12 and answers were taken down in shorthand by the</p> <p>13 undersigned, acting as stenographer and Notary Public;</p> <p>14 and the within and foregoing is a true, accurate and</p> <p>15 complete record of all of the questions asked of and</p> <p>16 answers made by the forementioned witness, at the time</p> <p>17 and place hereinabove referred to.</p> <p>18 The signature of the witness was not waived,</p> <p>19 and the deposition was submitted, pursuant to Rule 30 (e)</p> <p>20 and 32 (d) 4 of the Rules of Civil Procedure for the</p> <p>21 United States District Courts, to the deponent per copy</p> <p>22 of the attached letter.</p> <p>23</p> <p>24</p>
<p style="text-align: right;">Page 291</p> <p>1 MR. NELSON: No further questions.</p> <p>2 THE VIDEOGRAPHER: Okay. The time is 6:15 p.m.</p> <p>3 This is the end of media unit 4, it's also the end of the</p> <p>4 deposition of Dr. Stan McClellan. And we're going off</p> <p>5 the video record.</p> <p>6 Thank you, Dr. McClellan.</p> <p>7 (Off the record)</p> <p>8 -----</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>	<p style="text-align: right;">Page 293</p> <p>1 The undersigned is not interested in the within</p> <p>2 case, nor of kin or counsel to any of the parties.</p> <p>3 Witness my official signature and seal as</p> <p>4 Notary Public in and for Cook County, Illinois on this</p> <p>5 6th day of June, A.D. 2022.</p> <p>6</p> <p>7 </p> <p>8</p> <p>9 CAROL CONNOLLY, CSR, CRR</p> <p>10 CSR No. 084-003113</p> <p>11 Notary Public</p> <p>12 One North Franklin Street</p> <p>13 Suite 3000</p> <p>14 Chicago, Illinois 60606</p> <p>15 Phone: (312) 386-2000</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>

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1 Veritext Legal Solutions
1100 Superior Ave
2 Suite 1820
3 Cleveland, Ohio 44114
4 Phone: 216-523-1313
5
6 June 6, 2022
7
8 To: RAYMOND R. RICORDATI III
9
10 Case Name: Bearbox, LLC, et al. v. Lancium, LLC, et al.
11
12 Veritext Reference Number: 5259459
13
14 Witness: Stanley A. McLellann, Ph.D. Deposition Date: 6/3/2022
15
16 Dear Sir/Madam:
17
18 Enclosed please find a deposition transcript. Please have the witness
19 review the transcript and note any changes or corrections on the
20 included errata sheet, indicating the page, line number, change, and
21 the reason for the change. Have the witness' signature notarized and
22 forward the completed page(s) back to us at the Production address
23 shown
24 above, or email to production-midwest@veritext.com.
25
26 If the errata is not returned within thirty days of your receipt of
27 this letter, the reading and signing will be deemed waived.
28
29 Sincerely,
30 Production Department
31
32 NO NOTARY REQUIRED IN CA

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1 DEPOSITION REVIEW
2 CERTIFICATION OF WITNESS
3
4 ASSIGNMENT REFERENCE NO: 5259459
5 CASE NAME: Bearbox, LLC, et al. v. Lancium, LLC, et al.
6 DATE OF DEPOSITION: 6/3/2022
7 WITNESS' NAME: Stanley A. McLellann, Ph.D.
8 In accordance with the Rules of Civil
9 Procedure, I have read the entire transcript of
10 my testimony or it has been read to me.
11 I have made no changes to the testimony
12 as transcribed by the court reporter.
13
14 Date Stanley A. McLellann, Ph.D.
15 Sworn to and subscribed before me, a
16 Notary Public in and for the State and County,
17 the referenced witness did personally appear
18 and acknowledge that:
19 They have read the transcript;
20 They signed the foregoing Sworn
21 Statement; and
22 Their execution of this Statement is of
23 their free act and deed.
24
25 I have affixed my name and official seal
26 this ____ day of _____, 20 ____.
27
28 Notary Public
29
30 Commission Expiration Date
31
32

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1 DEPOSITION REVIEW
2 CERTIFICATION OF WITNESS
3
4 ASSIGNMENT REFERENCE NO: 5259459
5 CASE NAME: Bearbox, LLC, et al. v. Lancium, LLC, et al.
6 DATE OF DEPOSITION: 6/3/2022
7 WITNESS' NAME: Stanley A. McLellann, Ph.D.
8 In accordance with the Rules of Civil
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10 my testimony or it has been read to me.
11 I have listed my changes on the attached
12 Errata Sheet, listing page and line numbers as
13 well as the reason(s) for the change(s).
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15 as part of the record of my testimony.
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19 that both be appended to the transcript of my
20 testimony and be incorporated therein.
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22 Date Stanley A. McLellann, Ph.D.
23
24 Sworn to and subscribed before me, a
25 Notary Public in and for the State and County,
26 the referenced witness did personally appear
27 and acknowledge that:
28 They have read the transcript;
29 They have listed all of their corrections
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38 Notary Public
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40 Commission Expiration Date

Page 297

1 ERRATA SHEET
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21 SUBSCRIBED AND SWORN TO BEFORE ME THIS
22 DAY OF _____, 20 ____.
23
24 Notary Public
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26 Commission Expiration Date

Exhibit 2

Kaufmann, Adam

From: John R. Labbe <jlabbe@marshallip.com>
Sent: Friday, November 11, 2022 5:16 PM
To: Nelson, Mark; Stover, Chad; Kaufmann, Adam; Hooker, Darrick; Sarros, Dana; Lisch, David; Pendroff, Benjamin; Butler, Nell; Lytle, Kathleen
Cc: Benjamin T. Horton; Ray Ricordati; Chelsea M. Murray; John Lucas; Deborah S. Pocius; Stacey Cummings; Jamie Daly; Heather R Malkowski; amayo@ashbygeddes.com; Myers, Nikki; Kipp, Michele L.
Subject: [EXTERNAL]BearBox v. Lancium - Supplement to Expert Reports of Dr. Stan McClellan
Attachments: 2022_11_11_Supplement_to_McClellan_reports.pdf

Counsel,

I attach a Supplement to Expert Reports of Dr. Stan McClellan.

John



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Exhibit 3

Kaufmann, Adam

From: Benjamin T. Horton <bhorton@marshallip.com>
Sent: Friday, November 11, 2022 6:40 PM
To: Nelson, Mark; Stover, Chad; Kaufmann, Adam; Hooker, Darrick; Sarros, Dana; Lisch, David; Pendroff, Benjamin; Butler, Nell; Lytle, Kathleen
Cc: Ray Ricordati; Chelsea M. Murray; John Lucas; Deborah S. Pocius; Stacey Cummings; Jamie Daly; Heather R Malkowski; amayo@ashbygeddes.com; Myers, Nikki; Kipp, Michele L.; John R. Labbe
Subject: [EXTERNAL]RE: BearBox v. Lancium - Supplement to Expert Reports of Dr. Stan McClellan

Mark,

Following up on this, Dr. McClellan's supplement considers the Court's October 28, 2022 Markman Order, so we're supplementing consistent with FRCP 26(e)(2). This supplement addresses issues raised in your Motion in Limine No. 1 and during the meet a confer process, at which time Defendants said that Dr. McClellan should not be allowed to testify in consideration of the Court's Markman Order.

We are open to discussing a schedule for your expert to respond to this supplement, should he wish to do so. Please let us know if you'd like to talk; we're generally available early next week.

Best,
Ben

From: John R. Labbe <jllabbe@marshallip.com>
Sent: Friday, November 11, 2022 5:16 PM
To: Nelson, Mark <mnelson@btlaw.com>; Stover, Chad <Chad.Stover@btlaw.com>; Kaufmann, Adam <Adam.Kaufmann@btlaw.com>; Hooker, Darrick <Darrick.Hooker@btlaw.com>; Sarros, Dana <Dana.Sarros@btlaw.com>; Lisch, David <David.Lisch@btlaw.com>; bpendroff@btlaw.com; Butler, Nell <Nell.Butler@btlaw.com>; Lytle, Kathleen <Kathleen.Lytle@btlaw.com>
Cc: Benjamin T. Horton <bhorton@marshallip.com>; Ray Ricordati <rricordati@marshallip.com>; Chelsea M. Murray <cmurray@marshallip.com>; John Lucas <jlucas@marshallip.com>; Deborah S. Pocius <DPocius@marshallip.com>; Stacey Cummings <SCummings@marshallip.com>; Jamie Daly <jdaly@marshallip.com>; Heather R Malkowski <hmalkowski@marshallip.com>; amayo@ashbygeddes.com; Myers, Nikki <NMyers@ashbygeddes.com>; Kipp, Michele L. <MKipp@ashbygeddes.com>
Subject: BearBox v. Lancium - Supplement to Expert Reports of Dr. Stan McClellan

Counsel,

I attach a Supplement to Expert Reports of Dr. Stan McClellan.

John



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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BEARBOX LLC and AUSTIN STORMS,)	
)	
Plaintiffs,)	
)	
v.)	C.A. No. 21-534-GBW-CJB
)	
LANCIUM LLC, MICHAEL T.)	
MCNAMARA, and RAYMOND E. CLINE,)	
JR.)	
)	
Defendants.)	

CERTIFICATE OF SERVICE

I certify that on November 15, 2022, I caused a sealed copy of **Defendants' Opening Letter Brief in Support of its Emergency Motion to Strike Plaintiffs' Newly Disclosed, Untimely Expert Report and Request for Expedited Briefing** to be served on the following counsel of record by electronic mail.

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Dated: November 15, 2022

BARNES & THORNBURG LLP

/s/ Chad S.C. Stover

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Attorneys for Lancium LLC, Michael T.
McNamara, and Raymond E. Cline Jr.

JOINT PRETRIAL ORDER EXHIBIT 1

**JOINT STATEMENT OF FACTS THAT ARE ADMITTED
AND REQUIRE NO PROOF**

Pursuant to Local Rule 16.3(c)(3), the following facts are admitted and require no proof:

1. BearBox LLC is a Louisiana limited liability company with its principal place of business at 4422 Highway 22, Mandeville, Louisiana 70471.
2. At the time this case was filed, Austin Storms was a citizen of Louisiana.
3. Lancium LLC is a Delaware limited liability company with its principal place of business at 6006 Thomas Road, Houston, Texas 77041.
4. Michael T. McNamara is the Chief Executive Officer and a founder of Lancium and resides in Newport Beach, California.
5. Raymond E. Cline, Jr. is the Chief Technology Officer of Lancium and resides in Houston, Texas.
6. U.S. Patent No. 10,608,433 (“the ’433 Patent”) is titled “Methods and Systems for Adjusting Power Consumption Based on a Fixed-Duration Power Option Agreement,” and was issued by the United States Patent and Trademark Office (“USPTO”) on March 31, 2020.
7. The application that matured into the ’433 Patent, Application No. 16/702,931, was filed on December 4, 2019.
8. The provisional application to which the ’433 Patent claims priority, Application No. 62/927,119, was filed on October 28, 2019.
9. Austin Storms and Michael McNamara first met the evening of May 3, 2019 at the Fidelity Center for Advanced Technology Bitcoin Mining Conference in Boston, Massachusetts (“Fidelity Conference”).

E. Level of Ordinary Skill in the Art and Claim Construction of the Terms of the '433 Patent

1. Level of Ordinary Skill in the Art

39. I was asked to form an opinion regarding the level of skill in the art for the purpose of understanding the '433 patent. To make this determination, I first considered the relevant art, and then considered the education and experience of a person of ordinary skill in the field at the time of the filing of the '433 patent (a "POSITA"), which I understand to be either October 28, 2019 (the date of the filing of provisional application no. 62/927,119), or December 4, 2019 (the date application no. 16/702,931 was filed). I note that Dr. McClellan relied on the December 4, 2019 date (McClellan report, at ¶ 45), but my definition of both the field of the relevant art and a POSITA would be the same regardless of whether the relevant date is October or December 2019.

40. In my opinion, the field of the relevant art is power control of flexible data centers operating in power markets. With respect to the definition of a POSITA, I disagree with Dr. McClellan. A POSITA should have a Bachelor's degree in electrical engineering, computer science, or a similar field, plus at least two years of experience designing and/or implementing power control systems for datacenters. My opinions would not change if I applied Dr. McClellan's definition of a POSITA.

41. My qualifications and experience are at least those of a POSITA.

2. Claim Construction of the '433 Patent

42. I understand that the court has not yet been asked to construe the claims of the '433 patent. I further understand the legal principles related to claim construction and recite them above. I also understand that the words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art at the time of the purported invention.

43. I note that Dr. McClellan did not perform any claim construction. Instead, he applied the “plain and ordinary meaning of the claim terms.” (McClellan Report, at ¶ 49). But Dr. McClellan did not provide his understanding of the “plain and ordinary meaning” for any claim terms. I understand that Plaintiffs have the burden of proof on the inventorship issue.

44. To determine conception, I also apply the plain and ordinary meaning of the claim terms as would have been understood by a POSITA and, for certain terms, I discuss the specification’s use of those terms. I reserve the right to supplement my report should Plaintiffs’ or any of Plaintiffs’ experts use a different construction, or provide their understanding of the plain and ordinary meaning that is different than my understanding of the plain and ordinary meaning.

VII. LANCIMUM INDEPENDENTLY DEVELOPED, CONCEIVED, AND REDUCED ITS TECHNOLOGY TO PRACTICE, INCLUDING EACH OF THE INVENTIONS CLAIMED IN THE ’433 PATENT

45. It is my opinion that Lancium independently developed, conceived, and reduced its technology to practice, including each of the inventions claimed in the ’433 patent, and that such development, conception, and reduction to practice did not involve the use of any information allegedly provided to Mr. McNamara by Mr. Storms. As discussed above, my opinions are based on, among other things, my review of: (1) pleadings; (2) the ’632 application and the ’433 patent and its file history; (3) the parties’ Responses to Discovery (including documents cited in those responses); (4) the deposition testimony from this case and exhibits cited in same; (5) my review of other documents and materials; (6) the communications between Mr. Storms and Mr. McNamara; and (7) my education and forty-plus years of experience. I also relied in part on Mr. Siddiqi’s analysis as set forth in his report, and Mr. Baer’s analysis of the source code produced by Mr. Storms and relied upon by Dr. McClellan as discussed in Mr. Baer’s report.

participation.⁹² Lancium understood that it would have to follow ERCOT signals sent to a supervisory control and data acquisition (“SCADA”) system (*e.g.*, such as the one installed for its Load Resource qualification) and use those signals to adjust the load, all of which Lancium believed it could automate and integrate into its technology.⁹³

3. United States Patent No. 10,608,433

102. Lancium continued the above work in October 2019 and filed U.S. Provisional Application No. 62/927,117—the application upon which the ’433 patent claims priority—on October 28, 2019.⁹⁴ Based upon my review of Lancium’s documents and its SSR to ROG 3, I concur with Lancium’s understanding that it conceived the full combination of elements claimed in the ’433 patent between August and October 2019. As Lancium states on page 33 of its SSR to ROG 3, it conceived of the combination of receiving power option data as recited in, for example, claim 1, determining a performance strategy for a set of computing systems as recited in, for example, claim 1, and providing instructions to the computing systems as recited in, for example, claim 1 around this time.⁹⁵ I also concur with Lancium’s belief that it conceived of providing

⁹² *Id.* at 31-32 and documents cited therein.

⁹³ *Id.* Note, Lancium had developed proposals for wind farm installation of its flexible datacenters that included SCADA control systems by February 2018. SSR to ROG 3, at 15; LANCIUM0002779; LANCIUM00027787; LANCIUM00027788.

⁹⁴ *Id.* at 32-33 and documents cited therein.

⁹⁵ *Id.* at 33-34 and documents cited therein, including, but not limited to, LANCIUM00032863; LANCIUM00032864; LANCIUM00019937; LANCIUM00021608; LANCIUM00030943; LANCIUM00021609; LANCIUM00021600; LANCIUM00021626; LANCIUM00031222; LANCIUM00031214; LANCIUM00021624; LANCIUM00021628; LANCIUM00028860; LANCIUM00030570; and LANCIUM00021964.

instructions to the set of computing systems to perform one or more computational operations based on the foregoing performance strategy around this time as well.⁹⁶

103. It is also my opinion that Lancium constructively reduced the claims to practice by no later than October 28, 2019—the date U.S. Provisional Application No. 62/927,119 was filed.

104. The '433 patent is titled Methods and Systems for Adjusting Power Consumption Based on a Fixed-Duration Power Option Agreement. The '433 patent issued on March 31, 2020 and, as discussed above, claims priority from U.S. Application No. 16/702,931 filed on December 4, 2019, which, in turn, claims priority from Provisional Application No. 62/927,119, filed on October 28, 2019.

105. As discussed above, renewable resources faced several challenges. The inventions of the '433 patent were invented to address these challenges. Referring to Figure 2 below, Lancium developed flexible datacenters (including, but not limited to, cryptocurrency miners) that can be connected to use power from under certain conditions, for example, when there is an oversupply of power to the grid and the power price is economically viable.⁹⁷ Under such circumstances, the flexible datacenter may be configured to use load ramping abilities (*e.g.*, to quickly increase or decrease power usage) to effectively operate during intermittent periods of time when power is available from the generator.⁹⁸ The flexible data centers are shown as 220 in Figure 2, and may be behind the meter or grid connected.⁹⁹

⁹⁶ SSR to ROG 3, at 34.

⁹⁷ See Columns 7-22 for descriptions of various embodiments.

⁹⁸ *Id.* at 12:52-59.

⁹⁹ *Id.* at 16:18-36; 17:41-18:2.

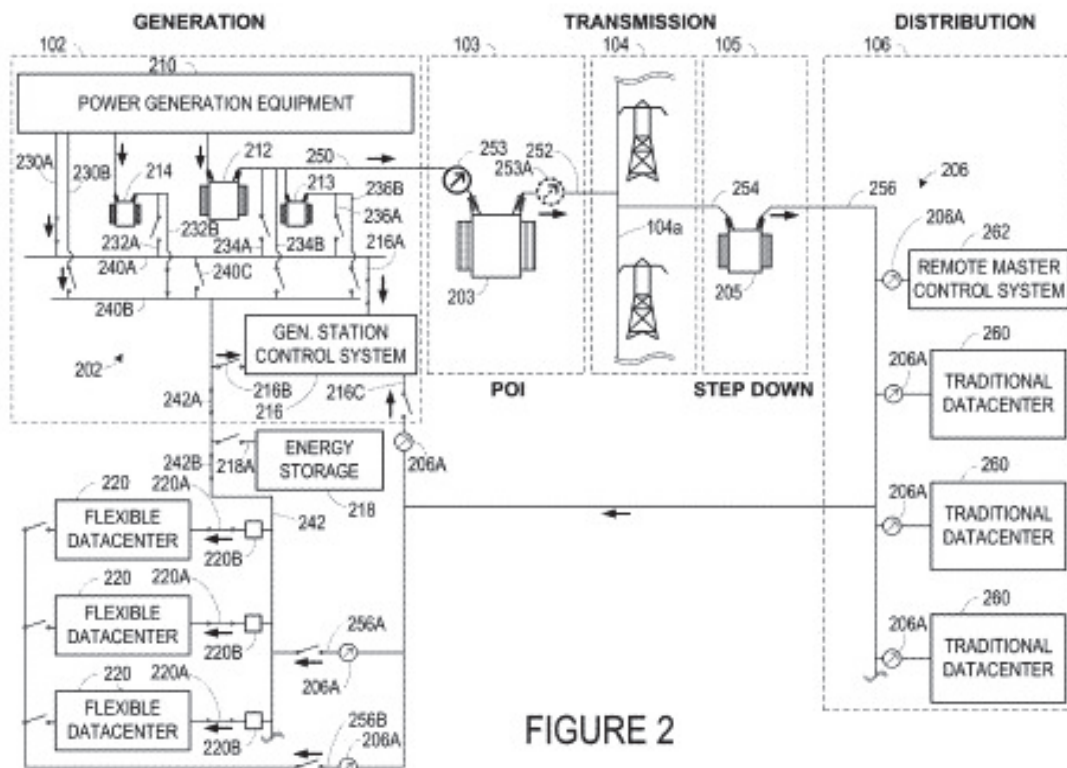


FIGURE 2

106. The '433 patent also discloses and claims a control system for controlling the flexible datacenters. Referring to Figure 11 (below), a system for implementing control strategies based on a power option agreement is disclosed. The system 1100 is an example arrangement that includes a control system (*e.g.*, the remote master control system 262 of Figs. 2 and 3), a load (*e.g.*, one or more datacenters 1102, 1104, 1106), and a power entity 1140.¹⁰⁰

¹⁰⁰ '433 patent, at 43:35-45.

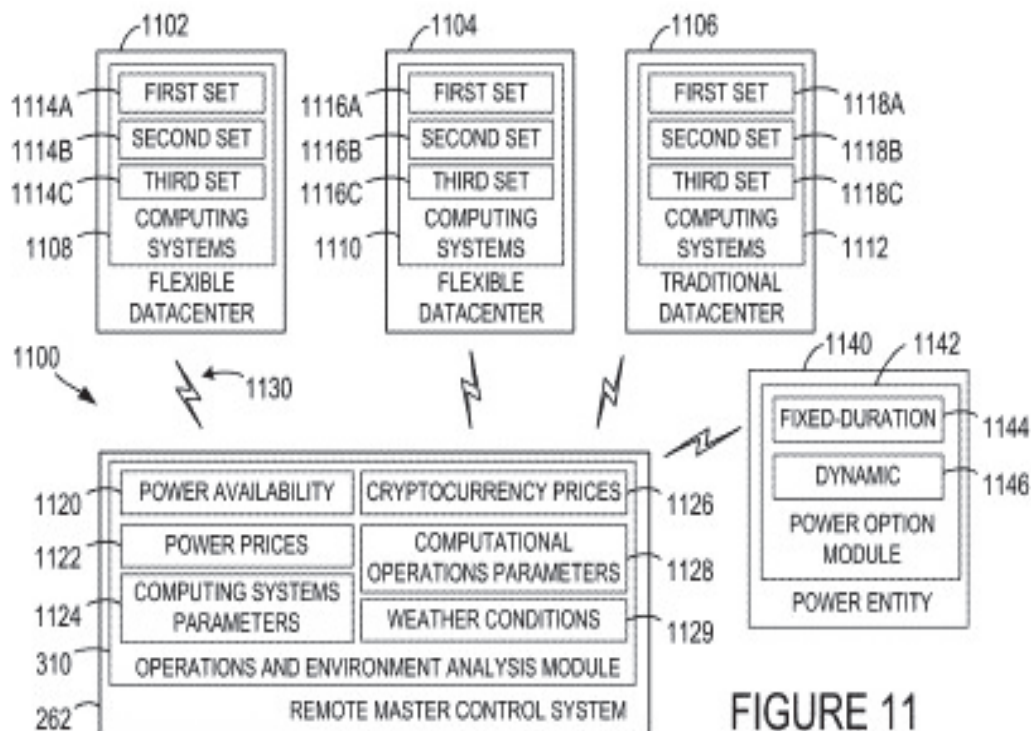


FIGURE 11

107. The '433 patent specification describes a “power option agreement” as an agreement between a power entity associated with the delivery of power (*e.g.*, a grid operator, power generation station, or local control station) and the load (*e.g.*, a datacenter such as 1102).¹⁰¹ As part of the power option agreement, the load provides the power entity with the right, but not the obligation, to reduce the amount of power delivered (*e.g.*, grid power) to the load up to an agreed amount of power during an agreed upon time interval.¹⁰² To provide the power entity this option, the load needs to be using at least the amount of power subject to the option (*e.g.*, the minimum power threshold),¹⁰³ and may grant the power entity with this option in exchange for

¹⁰¹ *Id.* at 43:46-50.

¹⁰² *Id.* at 43:50-57.

¹⁰³ *Id.* at 43:57-65.

monetary consideration.¹⁰⁴ The power entity may use the power option agreement to reserve the right to reduce the amount of grid power delivered to the load during a set time frame such as when the grid power may be better directed to other loads.¹⁰⁵

108. The remote master control system can serve as a control system to the load and can do so by, for example, monitoring conditions¹⁰⁶ in concert with the minimum power thresholds and time intervals set forth in (or derived from) the power option agreement (*e.g.*, power option data) to determine performance strategies and issue instructions based on those strategies that enable the load to meet the expectations of the power option agreement while efficiently using power to accomplish computational operations.¹⁰⁷ The patent explains that the power entity may be a grid operator, local station control system, power generation source, or a qualified scheduling entity (QSE).¹⁰⁸

109. The patent explains that power option agreements may be fixed duration power option agreements or dynamic power option agreements.¹⁰⁹ Referring to Figure 12 (below), which represents power option data based on a fixed duration power option agreement, the dark, multi-level line distinguishing the more darkly-shaded area represents the minimum power thresholds in

¹⁰⁴ *Id.* at 43:65-44:2.

¹⁰⁵ *Id.* at 44:3-35.

¹⁰⁶ The patent provides examples of monitored conditions, including, but not limited to, power availability, power prices, computing system parameters, cryptocurrency prices, computational operation parameters, and weather conditions. *Id.* at 47:57-48:61.

¹⁰⁷ *Id.* at 45:5-21.

¹⁰⁸ *Id.* at 45:52-60; 46:20-30.

¹⁰⁹ *See generally* Columns 46-47; *see also* 50:53-51:7

MWs that the load must maintain during the respective time periods per the power option agreement.¹¹⁰

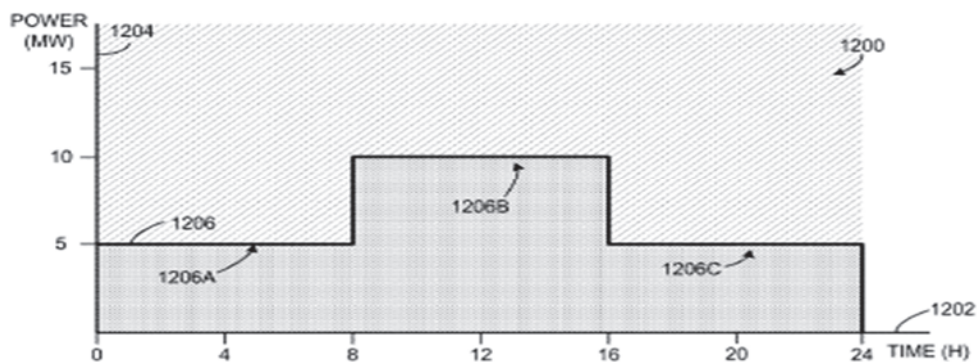


FIGURE 12

For example, as shown in Figure 12, the load must utilize 5MW during hours 0-8, must utilize 10MW during hours 8-16, and must utilize 5MW during hours 16-24.¹¹¹ The darkly-shaded area below the graphed line represent the amount of power the load could be directed to reduce power consumption by per the power option agreement.¹¹² The lighter shaded area above the graph line represents power levels that the load(s) may consume from the power grid during the 24-hour duration that would satisfy the requirements (*i.e.* the minimum power thresholds) set forth by the power option agreement.¹¹³

¹¹⁰ *Id.* at 46:31-49; *see also* 50:55-51:7.

¹¹¹ *Id.*

¹¹² *Id.* at 51:19-23.

¹¹³ *Id.* at 51:12-19.

C. Messrs. McNamara and Cline Are the Sole Inventors of the '433 Patent

110. The '433 patent has 20 claims. Claims 1, 17, and 20 are independent. The remaining 17 claims are dependent. The '433 patent's claims recite certain aspects of the above-described specific control system. Based on all of the forgoing discussion and evidence, it is my opinion that Messrs. McNamara and Cline are the sole inventors of each of the inventions claimed in each of the claims of the '433 patent. As set forth above, and described in further detail immediately below, it is well documented that Messrs. McNamara and Cline conceived each of these inventions with no contribution from Mr. Storms. I note that Dr. McClellan did not address Lancium's independent conception, development, or any of this evidence in his report.

1. Claim 1

111. Claim 1 reads:

1. A system comprising:

[a] a set of computing systems, wherein the set of computing systems is configured to perform computational operations using power from the power grid;

[b] a control system configured to:

[b1] monitor a set of conditions;

[b2] receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals;

[b3] responsive to receiving the power option data, determining a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval; and

[b4] provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

a) The preamble – “a system comprising”

112. I understand that the court has not ruled on whether the preamble “a system comprising” is limiting. Regardless, however, it is my opinion that Messrs. McNamara and Cline are the sole inventors of the claimed system as set forth below.

b) Element 1[a] – “a set of computing systems, wherein the set of computing systems is configured to perform computational operations using power from a power grid”

113. In my opinion, with respect to the specific claims of the ’433 patent, Messrs. McNamara and Cline conceived this element independently and without utilizing any information allegedly provided by Mr. Storms. Prior to May 2019, Messrs. McNamara and/or Cline understood that flexible datacenters may include bitcoin or other cryptocurrency miners; that flexible datacenters may perform computational operations, such as block chain hashing operations; that Bitcoin and other cryptocurrency miners are a set of computing systems;¹¹⁴ and that Lancium had been using grid power at its R&D center to perform computational operations with miners since at least 2018.¹¹⁵

c) Elements 1[b] and 1[b][1] – “a control system configured to: monitor a set of conditions”

114. In my opinion, with respect to the specific claims of the ’433 patent, Messrs. McNamara and/or Cline conceived this element independently and without utilization any information allegedly provided by Mr. Storms. Prior to May 2019, Messrs. McNamara and/or

¹¹⁴ See e.g., ’632 application, at [0022]; Fig. 2.

¹¹⁵ See, e.g., LANCIUM00018226; LANCIUM00035637 (Calpine Electricity Sales and Purchase Agreement, dated June 18, 2018).

Cline understood that the datacenter control system may modulate power delivery to a plurality of computing systems, and monitor unutilized behind-the-meter power availability, for example to determine when a datacenter ramp-up condition is met.¹¹⁶ Figure 4 of the '632 application and associated text, for example, teach that Lancium's local datacenter control system 220 could communicate to Lancium's remote master control system 420 and to the generator's local station control system 410, which, in turn, could communicate with the grid operator to "dynamically" adjust power delivery based on conditions or operational directives.¹¹⁷ Lancium's remote master control system could issue operational directives to Lancium's local datacenter control system and the operational directive may be based on, for example, current dispatchability, forward looking forecasts for when unutilized behind-the-meter power is (or is expected to be) available, economic considerations, reliability considerations, and/or operational considerations.¹¹⁸ The monitored conditions described in the '433 patent correlate with the conditions monitored by Lancium's overall control system described by Messrs. McNamara and/or Cline in the '632 application: power availability (*e.g.*, operational consideration), power prices (*e.g.*, economic consideration), computing system parameters (*e.g.*, operational consideration), cryptocurrency prices (*e.g.*, economic consideration), weather conditions (*e.g.*, economic consideration), etcetera.¹¹⁹

¹¹⁶ *Id.* at [0006-0007].

¹¹⁷ *Id.* at [0039].

¹¹⁸ *Id.* at [0044].

¹¹⁹ *See, e.g.*, '433 patent, at 47:57-61.

- d) Element 1[b][2] – “receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals;”**

115. In my opinion, with respect to the specific claims of the '433 patent, Messrs. McNamara and/or Cline conceived this element independently and without utilization of any information allegedly provided by Mr. Storms. As described above and in SSR to ROG 3, by March 2018 McNamara and/or Cline understood that Lancium's flexible datacenters could ramp to absorb and drop power within five minute windows and that these datacenters could be operated remotely via Lancium's Network Operations Center (“NOC”) that could respond to signals from grid operators.¹²⁰ Messrs. McNamara and/or Cline Lancium were, at this time, also aware of ERCOT and at least peripherally aware of ancillary services.¹²¹ Messrs/ McNamara and/or Cline continued to develop this technology and by October 2018 had spent more than \$1M on R&D infrastructure, container design, and software development.¹²²

116. Messrs. McNamara, Cline, and Lancium continued to develop their technology through 2019,¹²³ but it was not until the Summer and Fall of 2019 that Messrs. McNamara and Cline appreciated the benefits of applying their technology to ancillary serves and that is when they subsequently conceived of using their technology for receiving power option data based on a power option agreement specifying a set of minimum power thresholds and a set of time intervals

¹²⁰ See, e.g., SSR to ROG 3, at 16 and documents cited therein.

¹²¹ *Id.*

¹²² SSR to ROG 3, at 19 and documents cited therein, including LANCIUM00021489 for R&D numbers.

¹²³ See, e.g., SSR to ROG 3, at 19-28 (and documents cited therein).

in furtherance of performing ancillary services with their fast-ramping datacenters. On August 27, 2019, Mr. Cline sent an email to Mr. McNamara noting an important point that had not come across in previous conversations with their QSE: the “award” (received after offering into an ancillary services program and received as part of the establishment of the power option agreement) is essentially an “*obligation on our [Lancium’s] part, that we consume that amount of power the ERCOT COULD curtail.*”¹²⁴ In my opinion, this was the flash of insight that led to Messrs. McNamara and Cline conception, at least because this is when they first understood that their system would need to receive the award (the received set of power option data) which would be sent to Lancium based on, and in response to, the accepted prior offer by Lancium (which forms the awarded power option agreement) and the award includes the set of MW (*i.e.*, the set of *minimum* power thresholds) corresponding to each hour of the awarded offer (*i.e.*, the set of time intervals).¹²⁵ In further support of my opinion, I note that on August 28, 2019, Mr. Cline sends an email to MP2 confirming on Lancium’s behalf that, “[w]e are adjusting our economic curtailment plans to assure that we consume the obligated load we have been awarded. If we go below that level we will coordinate with the operations desk. We understand that we cannot receive an award for power that could be curtailed, if we are not using the power.”¹²⁶ I believe that this correspondence indicates the approximate date that Mr. Cline and Mr. McNamara formed in their

¹²⁴ See LANCIUM00030839; *see also* SSR to ROG 3, at 29-31 (and documents cited therein).

¹²⁵ LANCIUM00030799 and LANCIUM00030801 (examples of awards); *see also* Siddiqi Report, Section 6.4 (“No later than 1:30 in the Day-Ahead, ERCOT shall notify the parties to each cleared DAM transaction (*e.g.*, the buyer and seller) of the results of the DAM including awarded Ancillary Service Offers, specifying Resource, MW, Ancillary Service type, and price, for each hour of the awarded offer”).

¹²⁶ See LANCIUM00024173; *see also* SSR to ROG 3, at 29-31 (and documents cited therein).

minds the definite and permanent idea claimed in this limitation and the following limitations of Claim 1.

- e) Element 1[b3] – “responsive to receiving the power option data, determining a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval; and”

117. In my opinion, with respect to the specific claims of the '433 patent, Messrs. McNamara and Cline conceived this element independently and without utilization any information allegedly provided by Mr. Storms. I refer back to my analysis immediately above that on or about August 28, 2019, Mr. Cline indicated he understood that the award was an obligation for their Lancium's flexible datacenter system to operate above a *minimum* threshold load (e.g., the awarded MW) for each time interval (each hour in the award). As described previously and in other places in my report, Messrs. McNamara and Cline had previously developed control systems for its flexible datacenters that had long monitored or considered other various conditions and developed strategies based on those conditions, including economic considerations such as price response, energy arbitrage, and consideration of the profitability of mining. Following the flash of insight, it is my opinion that Messrs. Cline and/or McNamara then understood that Lancium's control system would need to determine the performance strategy described in this limitation and now adjust a power consumption target for the load by determining a power consumption target for the set of computing systems for each time interval that was *either equal to or greater than*, the *minimum* power threshold associated with each time interval in the award. For example, if economic conditions were favorable for mining, the control system would set the power

consumption target to Lancium's datacenter's maximum limit, which, as they understood at the time, would likely be greater than the awarded MW due to proration of the awards, or if power prices were high compared to mining revenue per MW, the control system would set the power consumption target equal to the minimum threshold for the time interval, and then Lancium would either sell back previously purchased but unused power as previously described or avoid incremental negative revenue above the minimum required load amount, depending on fixed power cost, RTM power price, and bitcoin revenues/margins.¹²⁷ Messrs. Cline and/or McNamara were also further aware that the control system could already contemplate a strategy that included adjusting the mix of computing systems acting as the load.¹²⁸ Messrs. McNamara and/or Cline further understood that this strategy could be integrated into Lancium's already existing fast ramping technology.¹²⁹ Based on my review of the materials in this case, and, in particular, the materials cited in SSR to ROG 3, it is my opinion that on or around August/September 2019, Messrs. McNamara and Cline formed in their minds the definite and permanent idea claimed in this limitation.

f) Element 1[b][4] – “provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.”

118. In my opinion, with respect to the specific claims of the '433 patent, Messrs. McNamara and/or Cline conceived this limitation independently and without utilization any

¹²⁷ See, e.g., LANCIUM00033215; SSR to ROG 3, at 31-32 (e.g. LANCIUM00033143; LANCIUM00031179; LANCIUM00031180; LANCIUM00033474; LANCIUM00033194; LANCIUM00018824 at 18828, 18833, 18858, 18867, 18871 (Sep. 1, 2019); LANCIUM00033158; LANCIUM00024131; LANCIUM00021587).

¹²⁸ LANCIUM00018825 at 18828, 18874 (Sep. 1, 2019); LANCIUM00018824.

¹²⁹ See, e.g., SSR to ROG 3, at 31-32 (and documents cited therein).